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UNITED STATES DISTRICT COURT

NORTHERN DISTRICT OF CALIFORNIA

MICHELLE MORAN, individually and on behalf of all others similarly situated,

Plaintiff,

vs.

EDGEWELL PERSONAL CARE, LLC

Defendant.

Case No.: 3:21-cv-07669-RS
Case Filed: 9/30/2021
FAC Filed: 2/21/2021

CORRECTED SECOND AMENDED CLASS ACTION COMPLAINT

1. Violation of Unfair Competition Law (Cal. Bus. & Prof. Code §§ 17200, *et seq.*)
2. Violation of False Advertising Law (Cal. Bus. & Prof. Code §§ 17500, *et seq.*)
3. Violation of Consumers Legal Remedies Act (Cal. Civ. Code §§ 1750, *et seq.*)
4. Breach of Warranty
5. Unjust Enrichment

JURY TRIAL DEMANDED

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BIBLIOGRAHY OF CITED REFERENCES

PUBLISHED SCHOLARLY ARTICLES

1. Bambino, Kathryn, et al., *Zebrafish in Toxicology and Environmental Health*, Curr. Top. Dev. Biol. (2017), available at https://pubmed.ncbi.nlm.nih.gov/28335863/ ("***Bambino Article***")
2. Blüthgen, Nancy, et al., *Accumulation and effects of the UV-Filter octocrylene in adult and embryonic zebrafish (Danio Rerio)*, 2014 Sci. Total Environ. 476-477:207-217 (Apr. 2014) available at https://pubmed.ncbi.nlm.nih.gov/24463256/ ("***Bluthgen Article***")
3. Boyd, Aaron, et al., *A burning issue: The effect of organic ultraviolet filter exposure on the behaviour and physiology of Daphnia magna*, 750 Sci. of the Total Environ. 141707 (Jan. 2021), available at https://www.sciencedirect.com/science/article/abs/pii/S0048969720352360 ("***Boyd Article***")
4. Bozec, Y. M., et al., *Impacts of coastal development on ecosystem structure and function of Yucatan coral reefs, Mexico*, In proceedings of the 11th International Coral Reef Symposium, Fort Lauderdale, FL, USA, 7-11 July 2008, Volume 2, pp. 691-695, available at https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.708.266&rep=rep1&type=pdf ("***Bozec Article***")
5. Brausch, J. M., et al., *A review of personal care products in the aquatic environment: Environmental concentrations and toxicity*, 82 Chemosphere 1518-1532 (2011), available at https://pubmed.ncbi.nlm.nih.gov/21185057/ ("***Brausch Article***")
6. Campos, Diana, et al., *Toxicity of organic UV-filters to aquatic midge Chrionomus riparius*, 143 Ectoxicol. Environ. Safe. 210-216 (Sept. 2017), available at https://pubmed.ncbi.nlm.nih.gov/28551578/ ("***Campos Article***")
7. Dai, Yu-jie, et al., *Zebrafish as a model system to study toxicology*, 33(1) Environmental Toxicology and Chemistry 11-17 (Jan. 2014), available at https://pubmed.ncbi.nlm.nih.gov/24307630/ ("***Dai Article***")
8. Danovaro, Roberto, et al., *Sunscreens Cause Coral Bleaching by Promoting Viral Infections*, 116(4) Environ. Health Perspect. 441-447 (Apr. 2008), available at https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2291018/ ("***Danovaro Article 2008***")
9. Diaz-Cruz, M. Silvia, et al., *Chemical analysis and ecotoxicological effects of organic UV-absorbing compounds in aquatic ecosystems*, 28(6) TrAC Trends in Anal. Chem. 708-717 (June 2009), available at https://www.sciencedirect.com/science/article/abs/pii/S0165993609000727?via%3Dihub ("***Diaz-Cruz Article***")
10. Downs, C. A., et al., *Toxicopathological Effects of the Sunscreen UV Filter Oxybenzone (Benzophenone – 3), on Coral Planulae and Cultured Primary Cells and Its Environmental Contamination in Hawaii and the U.S. Virgin Islands*, 70(2) Arch. Environ. Contam. Toxicol. 265-288 (Feb. 2016), available at https://pubmed.ncbi.nlm.nih.gov/26487337/ ("***Downs Article 2016***")
11. Downs, Craig A., et. al., *Benzophenone Accumulates over Time from the Degradation of Octocrylene in Commercial Sunscreen Products*, ACS (2021), available at https://pubs.acs.org/doi/10.1021/acs.chemrestox.0c00461 ("***Downs Article 2021***")
12. Fel, Jean-Pierre, et al., *Photochemical response of the scleractinian coral Stylophora pistillata to some sunscreen ingredients*, 38 Coral Reefs 109-122 (2019), available at https://link.springer.com/article/10.1007/s00338-018-01759-4 ("***Fel Article***")
13. Gago-Ferrero, Pablo, et al., *An overview of UV-absorbing compounds (organic UV filters) in aquatic biota*, 404(9) Anal. Bioanal. Chem. 2597-2610 (Nov. 2012), available at https://pubmed.ncbi.nlm.nih.gov/22669305/ (Feb. 20, 2022) ("***Gago-Ferrero Article 2012***")
14. Gago-Ferrero, Pablo, et al., *First Determination of UV Filters in Marine Mammals. Octocrylene Levels in Franciscana Dolphins*, 47(11) Environmental Science & Technology 5619-5625 (June 2013), available at https://pubmed.ncbi.nlm.nih.gov/23627728/ ("***Gago-Ferrero Article 2013***")

15. Giokas, Dimosthenis L., et al., *UV filters: From sunscreens to human body and the environment*, 26 TrAC Trends Anal. Chem. 360-374 (2007), available at https://www.sciencedirect.com/science/article/abs/pii/S0165993607000726 ("***Giokas Article***")
16. He, Tangtian, et al., *Comparative toxicities of four benzophenone ultraviolet filters to two life stages of two coral species*, 651(2) Sci. Total Environ. 2391-2399 (Feb. 2019), available at https://pubmed.ncbi.nlm.nih.gov/30336428/ ("***He Article I 2019***")
17. He, Tangtian, et al., *Toxicological effects of two organic ultraviolet filters and a related commercial sunscreen product in adult corals*, 245 Environ. Pollut. 462-471 (Feb. 2019), available at https://pubmed.ncbi.nlm.nih.gov/30458376/ ("***He Article II 2019***")
18. Hernandez-Pedraza, Miguel, et al., *Toxicity and Hazards of Biodegradable and Non-Biodegradable Sunscreens to Aquatic Life of Quintana Roo, Mexico*, 12(8) Sustainability 3270 (Apr. 17, 2020), available at https://www.sciencedirect.com/science/article/pii/S0160412019325656?via%3Dihub (accessed Feb. 15, 2022) ("***Hernandez-Pedraza Article***")
19. Jiménez-Díaz, I., et al., *Simultaneous determination of the UV-filters benzyl salicylate, phenyl salicylate, octyl salicylate, homosalate, 3-(4-methylbenzylidene) camphor and 3-benzylidene camphor in human placental tissue by LC-MS/MS. Assessment of their in vitro endocrine activity*, 936 Journal of Chromatography Biomed Life Sci. 80-87 (Oct. 2013), available at https://pubmed.ncbi.nlm.nih.gov/24004914/ ("***Jimenez-Diaz Article***")
20. Kim, Tae Hwan, et al.., *Percutaneous Absorption, Disposition, and Exposure Assessment of Homosalate, a UV Filtering Agent, in Rats*, 77(4) J. of Toxicology and Environmental Health, Part A., 202-213 (2014), available at https://pubmed.ncbi.nlm.nih.gov/24555679/ ("***Kim Article***")
21. Krause, M., et al., *Sunscreens: are they beneficial for health? An overview of endocrine disrupting properties of UV-filters*, 35(3) Int'l J. Andrology 424-436 (2012), available at https://pubmed.ncbi.nlm.nih.gov/22612478/ ("***Krause Article***")
22. Kunz, Petra Y., et al., *Multiple hormonal activities of UV filters and comparison of in vivo and in vitro estrogenic activity of ethyl-4-aminobenzoate in fish*, 79(4) Aquatic Toxicology 305-324 (Oct. 2006), available at https://pubmed.ncbi.nlm.nih.gov/16911836/ ("***Kunz Article I 2006***")
23. Kunz, Petra, et al., *Comparison of In Vitro and In Vivo Estrogenic Activity of UV Filters in Fish*, 90(2) Toxicological Sciences 349-361 (2006), available at https://academic.oup.com/toxsci/article/90/2/349/1658390 ("***Kunz Article II 2006***")
24. Lebedev, Albert T., et al., *Identification of avobenzone by-products formed by various disinfectants in different types of swimming pool waters*, 173 Environ. Int'l. 105495 (Apr. 2020), available at https://www.sciencedirect.com/science/article/pii/S0160412019325656?via%3Dihub ("***Lebedev Article***")
25. Ma, Risheng, et al., *UV Filters with Antagonistic Action at Androgen Receptor in the MDA-kb2 Cell Transcriptional-Activation Assay*, 74(1) Toxicological Sciences, 43-50 (2003), available at https://academic.oup.com/toxsci/article/74/1/43/1664165 ("***Ma Article***")
26. Manova, Eva., et al., *Organic UV filters in personal care products in Switzerland: a survey of occurrence and concentrations*, 216(4) Int'l. J. Hyg. Environ. Health 508-514 (Sept. 2012), available at https://pubmed.ncbi.nlm.nih.gov/23026542/ ("***Manova Article***")
27. McCoshum, Shaun, et al., *Direct and indirect effects of sunscreen exposure for reef biota*, 776 Hydrobiologia 139-146 (2016), available at https://link.springer.com/article/10.1007/s10750-016-2746-2 ("***McCoshum Article***")
28. Mitchelmore, C.L., et al., *Occurrence and distribution of UV-filters and other antropogenic contaminants in coastal surface water, sediment, and coral tissue from Hawaii*, 670 Sci. Total Environ. 398-410 (June 2019), available at https://pubmed.ncbi.nlm.nih.gov/30904653/ ("***Mitchelmore Article 2019***")
29. Muniz-Gonzalez, Ana-Belen, et al., *Unveiling complex responses at the molecular level: Transcriptional alterations by mixtures of bisphenol A, octocrylene, and 2'-ethylhexyl 4-(dimethylamino) benzoate on Chrinomus riparius*, 206 Ectoxicology and Environmental Safety 111199 (Sept. 2020), available at

https://www.sciencedirect.com/science/article/pii/S0147651320310381?via%3Dihub ("***Muniz-Gonzalez Article***")

30. Narla, Shanthi, et. al., *Sunscreen: FDA regulation, and environmental and health impact*, 19(1) Photochem. Photobiol. Sci. 66-70 (Jan. 2020) available at https://pubmed.ncbi.nlm.nih.gov/31845952/ ("***Narla Article***")
31. Ouchene, Lydia, et al., *Hawaii and Other Jurisdictions Ban Oybenzone or Octionaxte Sunscreens Based on the Confirmed Adverse Environmental Effects of Sunscreen Ingredients on Aquatic Environments*, 23(6) J. Cutan. Med. Surg. 648-649, (Nov./Dec. 2019), available at https://pubmed.ncbi.nlm.nih.gov/31729915/ ("***Ouchene Article***")
32. Ozaez, Irene, et al., *Ultraviolet Filters differentially impact the expression of key endocrine and stress genes in embryos and larvae of Chironomus riparius*, 557-558 Sci. Total. Environ. 240-247 (July 2016), available at https://pubmed.ncbi.nlm.nih.gov/26994811/ ("***Ozaez Article***")
33. Park, Chang-Beom, et al., *Single- and Mixture Toxicity of Three Organic UV-Filters, Ethylhexyl Methoxycinnamate, Octocrylene, and Avobenzone on Daphnia Magna*, 137 Ecotoxicology and Environmental Safety 57-63 (Mar. 2017), available at https://www.researchgate.net/publication/311425878_Single-_and_mixture_toxicity_of_three_organic_UV-filters_ethylhexyl_methoxycinnamate_octocrylene_and_avobenzone_on_Daphnia_magna ("***Park Article***")
34. Poiger, Thomas, et al., *Occurrence of UV filter compounds from sunscreens in surface waters: Regional mass balance in two Swiss lakes*, 55 Chemosphere 951-963 (2004), available at https://www.sciencedirect.com/science/article/abs/pii/S0045653504000426 ("***Poiger Article***")
35. Pont, Adam R., et al., *Active Ingredients in Sunscreens Act as Topical Penetration Enhancers for the Herbicide 2,4-Dichlorophenoxyacetic Acid*, 195(3) Toxicology and Applied Pharmacology 348-354 (Mar. 2004), available at https://pubmed.ncbi.nlm.nih.gov/15020197/ ("***Pont Article***")
36. Ramos, Sara, et al., *Advances in analytical methods and occurrence of organic UV-filters in the environment—A review*, 526 Sci. Total Environ. 278-311 (Sep. 2015), available at https://pubmed.ncbi.nlm.nih.gov/25965372/ ("***Ramos Article***")
37. Ruszkiewicz, Joanna, et al., *Neurotoxic effect of active ingredients in sunscreen products, a contemporary review*, 4 Toxicol. Rep. 245-259 (May 2017), available at https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5615097/#bib0635 ("***Ruszkiewicz Article***")
38. Sanchez-Quiles, David, et al., *Are sunscreens a new environmental risk associated with coastal tourism*, 83 Environ. Int'l. 158-170 (Oct. 2015), available at https://pubmed.ncbi.nlm.nih.gov/26142925/ ("***Sanchez-Quiles Article***")
39. Schneider, Samantha L., et al., *Review of environmental effects of oxybenzone and other sunscreen active ingredients*, 80(1) J. Am. Acad. Dermatology 266 (2019), available at https://pubmed.ncbi.nlm.nih.gov/29981751/ ("***Schneider Article***")
40. Schreurs, Richard, et al., *Estrogenic Activity of UV Filters Determined by an In Vitro Reporter Gene Assay and an In Vivo Transgenic Zebrafish Assay*, 76 Archives of Toxicology 257-261 (June 2002), available at https://pubmed.ncbi.nlm.nih.gov/12107642/ ("***Schreurs Article 2002***")
41. Schreurs, Richard H. M. M., et al., *Interaction of polycyclic musks and UV filters with the estrogen receptor (ER), androgen receptor (AR), and progesterone receptor (PR) in reporter gene bioassays*, 83 Toxicological Sciences 264-272 (2005), available at https://pubmed.ncbi.nlm.nih.gov/15537743/ ("***Schreurs Article 2005***")
42. Sieratowicz, Agnes, et al., *Acute and chronic toxicity of four frequently used UV filter substances for Desmodesmus subpicatus and Daphnia magna*, 46(A) J. Environ. Health Sci. 1311-1319 (2011), available at https://pubmed.ncbi.nlm.nih.gov/21929467/ ("***Sieratowicz Article***")
43. Slijkerman, D. M. E., et al., *Sunscreen Ecoproducts: Product Claims, Potential Effects and Environmental Risks of Applied UV Filters* (Wageningen Marine Research 2018), available at https://research.wur.nl/en/publications/sunscreen-ecoproducts-product-claims-potential-effects-and-enviro ("***Slijkerman Article***")

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44. Stien, Didier, et al., *Metabolomics Reveal That Octocrylene Accumulates in Pocillopora Damicornis Tissues as Fatty Acid Conjugates and Triggers Coral Cell Mitochondrial Dysfunction*, 91(1) Analytical Chemistry 990-995 (Jan. 2019), available at https://pubmed.ncbi.nlm.nih.gov/30516955/ ("***Stien Article 2019***")
45. Stien, Didier, et al., *A unique approach to monitor stress in coral exposed to emerging pollutants*, 10(1) Sci. Rep. 9601 (June 2020), available at https://pubmed.ncbi.nlm.nih.gov/32541793/ ("***Stien Article 2020***")
46. Thorel, Evane, et al., *Effect of 10 UV Filters on the Brine Shrimp Artemia salina and the Marine Microalga Tetraselmis sp*, 8(2) Toxics. 29 (Apr. 2020), available at https://pubmed.ncbi.nlm.nih.gov/32290111/ ("***Thorel Article***")
47. Tibbetts, John, *Bleached, But Not by the Sun: Sunscreen Linked to Coral Damage*, 116 Environ. Health Perspect. A173 (Apr. 2008), available at https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2291012/ ("***Tibbetts Article***")
48. Tovar-Sanchez, Antonio, et al., *Sunscreen Products as Emerging Pollutants to Coastal Waters*, 8(6) PLoS One e65451 (June 2013), available at https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3673939/#pone.0065451.s004 ("***Tovar-Sanchez Article***")
49. Tsui, Mirabelle M. P., et al., *Occurrence, Distribution, and Fate of Organic UV Vilters in Coral Communities*, 51(8) Environ. Sci. Technol. 4182-4190 (Apr. 2017), available at https://pubmed.ncbi.nlm.nih.gov/28351139/ ("***Tsui Article***")
50. Wijgerde, Tim, et al., *Adding insult to injury: Effects of chronic oxybenzone exposure and elevated temperature on two reef-building corals*, 733 Sci. Total Environ. 139030 (Sept. 2020), available at https://pubmed.ncbi.nlm.nih.gov/32446051/ ("***Wijgerde Article***")[1]
51. Yan, Salihong, et al., *Reproductive toxicity and estrogen activity in Japanese medaka (Oryzias latipes) exposed to environmentally relevant concentrations of octocrylene*, 261 Environ. Pllut. 114104 (June 2020), available at https://pubmed.ncbi.nlm.nih.gov/32045793/ ("***Yan Article***")
52. Yang, Changwon, et al., *Homosalate Aggravates the Invasion of Human Trophoblast Cells as Well as Regulates Intracellular Signaling Pathways Including PI3K/AKT and MAPK Pathways*, 243(B) Environmental Pollution 1263-1273 (Dec. 2018), available at https://europepmc.org/article/med/30267922 ("***Yang Article***")
53. Zhong, Xin, et al., *Comparison of toxicological effects of oxybenzone, avobenzone, octocrylene, and octinoxate sunscreen ingredients on cucumbler plants (Cucumis sativus L.)*, 714 Sci. Total Environ. 136879 (Apr. 2020), available at https://pubmed.ncbi.nlm.nih.gov/32018996/ ("***Zhong Article***")

BOOKS

1. Popek, Emma, *Environmental Chemical Pollutants*, SAMPLING AND ANALYSIS OF ENVIRONMENTAL CHEMICAL POLLUTANTS, A COMPLETE GUIDE (2d Ed., Elsevier, 2018)

GOVERNMENT WEBSITES

1. *Avobenzone*, NATIONAL INSTITUTE OF HEALTH, https://pubchem.ncbi.nlm.nih.gov/compound/Avobenzone#section=GHS-Classification
2. *Coral Reef Ecosystems*, NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION, https://www.noaa.gov/education/resource-collections/marine-life/coral-reef-ecosystems ("***NOAA Coral Reef Ecosystems Article***")
3. *Hawaii Senate Bill SB132 SD2 HD1*, HAWAII STATE LEGISLATURE, https://www.capitol.hawaii.gov/measure_indiv.aspx?billtype=SB&billnumber=132&year=2021

[1] (finding corals *stylophora pistillata* and *acropora tenuis* 2-week exposure to organic UV filter oxybenzone, a type of benzophenone (which is a degradant of octocrylene), at a concentration as low as 0.06 μg/L^{-1}, significantly decreased zooxanthellae photosynthetic yield by 5% for both coral species and, when combined with a heat wave, killed <u>all</u> exposed *acropora tenuis* corals (0% survival rate))

4. *Homosalate*, NATIONAL INSTITUTE OF HEALTH, https://pubchem.ncbi.nlm.nih.gov/compound/Homosalate#section=Hazards-Identification
5. *Octocrylene*, NATIONAL INSTITUTE OF HEALTH, https://pubchem.ncbi.nlm.nih.gov/compound/Octocrylene#section=GHS-Classification
6. *Protect Yourself and Protect the Reef*, NATIONAL PARK SERVICE, https://www.nps.gov/articles/protect-yourself-and-protect-the-reef.htm
7. *Scientific Committee on Consumer Safety Opinion on Homosalate*, EUROPEAN UNION, https://ec.europa.eu/health/system/files/2021-06/sccs_o_244_0.pdf
8. *Scientific Committee on Consumer Safety Opinion on Octocrylene*, EUROPEAN UNION, https://ec.europa.eu/health/system/files/2021-04/sccs_o_249_0.pdf
9. *Skincare Chemicals and Coral Reefs*, NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION, https://oceanservice.noaa.gov/news/sunscreen-corals.html ("***NAOO Skincare and Coral Reefs Article***")
10. *Toxicity Screening using Zebrafish Embryos: Form and Function*, ENVIRONMENTAL PROTECTION AGENCY, https://www.epa.gov/chemical-research/toxicity-screening-using-zebrafish-embryos-form-and-function

DEFENDANT'S WEBSITE

1. *Morgan Stanley Consumer & Retail Virtual Conference Presentation*, EDGEWELL PERSONAL CARE, https://ir.edgewell.com/~/media/Files/E/EdgeWell-IR/presentation/ms-conf-dec-02-vf.pdf

DICTIONARIES & ENCYCLOPEDIAS

1. *Eco-Friendly*, MERRIAM-WEBSTER, https://www.merriam-webster.com/dictionary/eco-friendly
2. *Friendly*, MERRIAM-WEBSTER, https://www.merriam-webster.com/dictionary/friendly
3. *Reef*, NATIONAL GEOGRAPHIC, https://www.nationalgeographic.org/encyclopedia/reef/

INTERNET ARTICLES

1. *9 Reasons Why You Should Switch to a Reef Safe Sunscreen*, ELLE, https://www.elle.com/beauty/makeup-skin-care/g32685164/best-reef-safe-sunscreen/
2. *About the Kohala Center*, THE KOHALA CENTER, https://kohalacenter.org/about
3. *Are you using Mineral Sunscreen?*, THE KOHALA CENTER, https://kohalacenter.org/kbec/sun-protection
4. *Bill would prohibit sale of sunscreen products containing avobenzone and octocrylene*, WEST HAWAII TODAY (March 10, 2021), https://www.westhawaiitoday.com/2021/03/10/hawaii-news/bill-would-prohibit-sale-of-sunscreen-products-containing-avobenzone-and-octocrylene/
5. *EWG's Sunscreen Guide*, ENVIRONMENTAL WORKING GROUP, https://www.ewg.org/sunscreen/report/executive-summary/
6. *Great Barrier Reef*, WORLD WILDLIFE FUND, https://www.wwf.org.au/what-we-do/oceans/great-barrier-reef#gs.b5pmtu
7. *Hawai'i Senate Bill Bans Harmful Sunscreen Chemicals*, CENTER FOR BIOLOGICAL DIVERSITY (Mar. 9, 2021), https://biologicaldiversity.org/w/news/press-releases/hawaii-senate-bill-bans-harmful-sunscreen-chemicals-2021-03-09/ ("***CBD Hawai'i Senate Bill Article***")
8. *Homosalate*, CAMPAIGN FOR SAFE COSMETICS, https://www.safecosmetics.org/get-the-facts/chemicals-of-concern/homosalate/
9. *How to Know if Your Sunscreen is Killing Coral Reefs – and the Brands to Try Instead*, TRAVEL AND LEISURE, https://www.travelandleisure.com/style/beauty/reef-safe-sunscreen
10. *Nearly All Coral Reefs Will Disappear Over the Next 20 Years, Scientists Say*, FORBES, https://www.forbes.com/sites/trevornace/2020/02/24/70-90-percent-of-coral-reefs-will-disappear-over-the-next-20-years-scientists-say/?sh=70e461da7d87
11. *Popular sunscreens under scrutiny as scientists cite another potential carcinogen*, LOS ANGELES TIMES (Aug. 10, 2021), https://www.latimes.com/business/story/2021-08-10/sunscreen-fda-carcinogen-benzophenone-octocrylene-concerns

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12. *Protect Land + Sea Certification*, HAERETICUS ENVIRONMENTAL LABORATORY, http://haereticus-lab.org/protect-land-sea-certification-3/
13. *Reef Safe Sunscreen Guide*, SAVE THE REEF, https://savethereef.org/about-reef-save-sunscreen.html
14. *The Trouble with Ingredients In Sunscreen*, ENVIRONMENTAL WORKING GROUP, https://www.ewg.org/sunscreen/report/the-trouble-with-sunscreen-chemicals/

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SECOND AMENDED COMPLAINT

1. Plaintiff Michelle Moran ("**Plaintiff**"), individually and on behalf of all others similarly situated, as more fully described herein (the "**Class**" and "**Class Members**"), brings this class action complaint against Defendant Edgewell Personal Care, LLC ("**Defendant**"), and alleges the following based upon information and belief, unless otherwise expressly stated as based upon Plaintiff's personal knowledge:

I.

CASE SYNOPSIS

2. **Synopsis.** To obtain an unfair competitive advantage in the billion-dollar sunscreen market, Defendant is exposing consumers and the environment (*e.g.*, coral reefs and marine life) to harmful organic ultra violet ("**UV**") filters in their sunscreens by deceptively labeling its Banana Boat® brand sunscreens as "REEF FRIENDLY." Defendant has reaped hundreds of millions of dollars through this fraudulent marketing scheme based on a calculated business decision to put profits over people and the environment. Specifically, Defendant falsely and misleadingly labels certain of its Banana Boat® brand sunscreen products as "REEF FRIENDLY" (hereinafter, **"Reef Friendly Representation," "False Advertising Claim"** and/or **"Challenged Representation"**). An example of the Challenged Representation is depicted on the following page.

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3. The Challenged Representation has misled reasonable consumers, including Plaintiff, into believing that the Products only contain ingredients safe for reefs—i.e., the Products do not contain ingredients that can harm or kill reefs, which includes corals and their inhabiting and/or co-dependent marine life. Contrary to this labeling, the Products actually contain avobenzone, homoslate, octisalate, and/or octocrylene (the "**Harmful Ingredient(s)**"), which are chemical organic UV filters that are hazardous to reefs (including the corals and their inhabiting and/or co-dependent marine life) because they can harm or kill them. Through falsely, misleadingly, and deceptively labeling the Products with the Challenged Representation, Defendant sought to take advantage of consumers' desire for sunscreens that are safe for coral reefs and/or the marine life and related ecosystems that depend on them, while reaping the financial benefits of using less desirable, harmful, and/or less costly chemicals in the Products. Defendant has done so at the expense of unwitting consumers, as well as Defendant's lawfully acting competitors, over whom Defendant maintains an unfair competitive advantage.

4. **The Products.** The Products at issue are Banana Boat® brand sunscreens and sun-blocks manufactured and/or marketed by Defendant that contain the Challenged Representation on the front labels and/or packaging, in all sizes, forms of topical application (stick, paste, lotion, cream, spray, or mist), SPFs, and variations, which include, but are not necessarily limited to:

(1) Banana Boat Sport Ultra Sunscreen Lotion (including SPF 15, 30, and 50+, and the 1-, 2-, 3-, 8-, and 12-oz. sizes) (*see* **Exhibit 1A-G** [Product Images]);

(2) Banana Boat Sport Ultra Sunscreen Spray (including SPF 15, 30, 50+, and the 6- and 12-oz sizes) (*see* **Exhibit 1H-L** [Product Images]);

(3) Banana Boat Sport Ultra Sunscreen Stick (including SPF 50+ and 1.5-oz sizes) (*see* **Exhibit 1M** [Product Images]);

(4) Banana Boat Sport Ultra Sunscreen Lotion (Faces) (including SPF 30 and 3-oz sizes) (*see* **Exhibit 1N** [Product Images]); and

(5) Banana Boat Sport Coolzone Sunscreen Spray (including SPF 30, 50+ and 1.8-, 6-, and 12-oz sizes) (*see* **Exhibit 1O-R** [Product Images]) (collectively, the "**Products**").

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5. **Primary Objective.** Plaintiff brings this action individually and on behalf of those similarly situated to represent a National Class and a California Subclass of consumers who purchased the Products. While Plaintiff seeks a monetary recovery of the Products' purchase price and Defendant's ill-gotten gains as consistent with permissible law (including, for example, damages, restitution, disgorgement, and any applicable penalties/punitive damages), Plaintiff's primary litigation objective is to stop Defendant's deceptive labeling and advertising of the Products with the Challenged Representation, by enjoining Defendant's use of the representation on the Products' labels and/or requiring its modification to avoid further consumer deception, for the benefit of all consumers.

II.

JURISDICTION

6. This Court has original jurisdiction over this action pursuant to the Class Action Fairness Act of 2005 (codified at 28 U.S.C. § 1332(d)), because the proposed Class consists of 100 or more members; the amount in controversy exceeds $5,000,000, exclusive of costs and interest; and minimal diversity exists. This Court also has supplemental jurisdiction over the state law claims pursuant to 28 U.S.C. § 1367.

III.

VENUE

7. Venue is proper in this District under 28 U.S.C. § 1391 because a substantial part of the events and omissions giving rise to Plaintiff's claims occurred in this District. In addition, Plaintiff purchased the unlawful Products in this District, and Defendant has marketed, advertised, and sold the Products within this District.

IV.

PARTIES

A. Plaintiff

8. **Plaintiff Michelle Moran.** The following is alleged based upon personal knowledge: (1) Plaintiff is a resident of San Francisco, California. (2) Plaintiff purchased the Banana Boat Sport Ultra Lotion Sunscreen SPF 30 for approximately $9.90 at a CVS Store in San Francisco, California

in the summer of 2021. (3) In making the purchase, Plaintiff relied on the Reef Friendly Representation on the Product's front label, which led Plaintiff to believe that the Product's ingredients were all reef-safe—i.e., the Product's ingredients could not harm reefs, including the corals and marine life that inhabit and/or depend on them. (4) At the time of purchase, Plaintiff did not know that this Representation was false—i.e., Plaintiff did not know that the Product contained ingredients that can harm or kill reefs, including corals and their inhabiting and/or co-dependent marine life. (5) Plaintiff would not have purchased the Product had Plaintiff known that the Challenged Representation was false because the Product contained ingredients hazardous to reefs because they can harm and/or kill reefs, including the corals and their inhabiting and/or co-dependent marine life. (6) Plaintiff continues to see the Products available for purchase and desires to purchase them again if the Reef Friendly Representation were in fact true. (7) Plaintiff is not personally familiar with ingredients in the Products and does not possess any specialized knowledge, skill, experience, or education in sunscreens, sunscreen ingredients, marine life pollutants, or chemicals hazardous to reefs or aquatic life, and, therefore, Plaintiff has no way of determining whether the Challenged Representation on the Products is true. (8) Plaintiff is, and continues to be, unable to rely on the truth of the Reef Friendly Representation on the Products' labels.

9. **Plaintiff's Future Harm.** If the Products indeed contained only ingredients that were actually "Reef Friendly" as labeled and advertised, Plaintiff would purchase the Products again in the future, despite the fact that the Products were once marred by false advertising or labeling. Therefore, Plaintiff would reasonably, but incorrectly, assume the Products were improved. In that regard, Plaintiff is an average consumer who is not sophisticated in marine toxicology or sunscreen formulation and does not know the meaning or the import of the Products' ingredients. Accordingly, Plaintiff is at risk of reasonably, but incorrectly, assuming that Defendant fixed the formulation of the Products such that Plaintiff may buy them again, believing they are no longer falsely advertised and labeled.

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B. Defendant

10. **Defendant Edgewell Personal Care, LLC** is a limited liability company headquartered in Connecticut, with its primary place of business in Shelton, Connecticut, and was doing business in the state of California during all relevant times. Directly and through its agents, Defendant has substantial contacts with and receives substantial benefits and income from and through the State of California. Defendant is one of the owners, manufacturers, and/or distributors of the Products, and is one of the companies that created and/or authorized the false, misleading, and deceptive labeling of the Products. Defendant and its agents promoted, marketed and sold the Products at issue in this jurisdiction and in this judicial district. The unfair, unlawful, deceptive, and misleading False Advertising Claims on the Products were prepared, authorized, ratified, and/or approved by Defendant and its agents, and were disseminated throughout California and the nation by Defendant and its agents to deceive and mislead consumers into purchasing the Products. Further, Defendant controls approximately 25% of a $2 billion sunscreen market and therefore its Products comprise a substantial market share of all sunscreens.[2]

V.

FACTUAL ALLEGATIONS

C. Sunscreen Pollution

11. **Reefs.** Reefs are comprised, not only of colonies of corals, but thousands of inhabiting and co-dependent aquatic animal and plant species, including mammals, reptiles, fish, crustaceans, shellfish, oysters, sea anemones, seaweed, algae, and the like, and are considered one of the most biodiverse ecosystems in the world and certainly within the ocean.[3] Reefs protect coastlines from storms and erosion, provide jobs for local communities, and offer opportunities for recreation.[4] Over

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2 *Morgan Stanley Consumer & Retail Virtual Conference Presentation*, EDGEWELL PERSONAL CARE, https://ir.edgewell.com/~/media/Files/E/EdgeWell-IR/presentation/ms-conf-dec-02-vf.pdf (accessed February 16, 2022), at p. 17.

3 *Reef*, NATIONAL GEOGRAPHIC, https://www.nationalgeographic.org/encyclopedia/reef/ (accessed February 16, 2022).

4 *Coral Reef Ecosystems*, NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION, https://www.noaa.gov/education/resource-collections/marine-life/coral-reef-ecosystems (accessed February 16, 2022) ("***NOAA Coral Reef Ecosystems Article***").

half a billion people depend on reefs for food, income, and protection.[5] Additionally, reef ecosystems are culturally important to people around the world.[6] Indeed, the world's largest coral reef is considered to be one of the great seven natural wonders of the world due to its scale, beauty, and biodiversity.[7] Despite their ecological and cultural importance, reefs are disappearing at alarming rates.[8] Among other factors, reef ecosystems are threatened by pollution. In fact, some scientists predict that if current trends continue, nearly all coral reefs will disappear over the next twenty to fifty years.[9] In recent years, consumers have become increasingly concerned about protecting the environment, including reefs, through individual action, such as purchasing reef safe sunscreens, which are free from chemicals that harm or kill reefs, including the corals and inhabiting and/or co-dependent marine life. Thus, "Reef Friendly" sunscreens, such as the Products in this case, are rapidly increasing in popularity due to their perceived positive ecological benefit.[10]

12. **Corals.** Coral belong to the *Cnidaria* family, which are soft bodied animals that engage in symbiosis with algae (zooxanthellae). Zooxanthellae live on coral. Their photosynthesis gives coral energy, and the algae itself provides the coral's vibrant colors. As coral grows, it forms branching structures culminating in reefs. When coral reefs face oxidative stress from pollutants, they expel the algae from their surface, turning the coral white (also known as "bleaching"). This process often leads to the coral reef's demise.[11]

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5 *NOAA Coral Reef Ecosystems Article*.

6 *NOAA Coral Reef Ecosystems Article*.

7 *NOAA Coral Reef Ecosystems Article*; *Great Barrier Reef*, WORLD WILDLIFE FUND, https://www.wwf.org.au/what-we-do/oceans/great-barrier-reef#gs.b5pmtu (accessed Feb. 16, 2022).

8 *NOAA Coral Reef Ecosystems Article*.

9 *Nearly All Coral Reefs Will Disappear Over the Next 20 Years, Scientists Say*, FORBES, https://www.forbes.com/sites/trevornace/2020/02/24/70-90-percent-of-coral-reefs-will-disappear-over-the-next-20-years-scientists-say/?sh=70e461da7d87 (accessed Feb. 16, 2022).

10 *Reef Safe Sunscreen Guide*, SAVE THE REEF, https://savethereef.org/about-reef-save-sunscreen.html (accessed Feb. 16, 2022); *9 Reasons Why You Should Switch to a Reef Safe Sunscreen*, ELLE, https://www.elle.com/beauty/makeup-skin-care/g32685164/best-reef-safe-sunscreen/ (accessed Feb. 16, 2022); *How to Know if Your Sunscreen is Killing Coral Reefs – and the Brands to Try Instead*, TRAVEL AND LEISURE, https://www.travelandleisure.com/style/beauty/reef-safe-sunscreen (accessed Feb. 16, 2022).

11 Bozec, Y. M., et al., *Impacts of coastal development on ecosystem structure and function of Yucatan coral reefs, Mexico*, In proceedings of the 11th International Coral Reef Symposium, Fort

Lauderdale, FL, USA, 7-11 July 2008, Volume 2, pp. 691-695, available at https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.708.266&rep=rep1&type=pdf ("Bozec Article") (comparing costal reefs in low and high tourist development areas with varying human density to find major shifts in the structure and function of coral reefs, including decreased fish functional diversity, correlated with high tourist development and human density); Danovaro, Roberto, et al., *Sunscreens Cause Coral Bleaching by Promoting Viral Infections*, 116(4) Environ. Health Perspect. 441-447 (Apr. 2008), available at https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2291018/ (accessed Feb. 20, 2022) ("***Danovaro Article 2008***") (discussing: (1) the "massive coral bleaching (i.e., loss of symbiotic zooxanthellae hosted within scleractinian corals) has increased dramatically" during the 90's and 2000's; (2) the correlative increase in production and consumption of personal care and cosmetic sunscreens and the detection of their common ingredients in aquatic organisms and waterways (noting research showing the estimated global release of sunscreens in coral reef areas to be 4,000 to 6,000 tons/year, average dose applications, average body surface areas, average number of daily applications, average number of tourists, and annual production of UV filters and expected usage (between 16,000 and 25,00 tons in tropical areas), and their finding that approximately 25% of applied sunscreen washes off during swimming and bathing after 20 minutes of immersion); (3) research findings demonstrate UV filters bioaccumulate in and have toxic effects on aquatic organisms, including their toxic by-products; and (4) studies reporting pesticides, hydrocarbons, and other contaminants can cause coral bleaching, which combined with sun-care products that induce the viral lytic cycle in microorganisms and algae, likely work together to increase the frequency and extent of coral bleaching; (5) conducting, from 2003 to 2007, various *in situ* testing of sunscreens on coral branches from the *acropora*, *stylophora pistillata*, and *millepora complanate* species, which contained *inter alia* avobenzone (BMDBM), octisalate (EHS), octocrylene (OCT), and the octocrylene degradant, benzophenone (BZ), to find: "In all replicates and at all sampling sites, sunscreen addition even in very low quantities (i.e., 10 µL/L) resulted in the release of large amounts of coral mucous (composed of zooxanthellae and coral tissue) within 18–48 [hours of exposure], and complete bleaching of hard corals within 96 [hours of exposure] [citation omitted]. Different sunscreen brands, protective factors, and concentrations were compared, and all treatments caused bleaching of hard corals, although the rates of bleaching were faster when larger quantities were used [citation omitted]. . . . We tested sunscreen (10 µL/L) containing concentrations of UV filters higher than those reported in most natural environments. At the same time, the coral response to sunscreen exposure was not dose dependent, as the same effects were observed at low and high sun-screen concentrations. Therefore, we hypothesize that UV filters can have potentially negative impacts even at concentrations lower than those used in the present study."; and (6) concluding: "[s]unscreens cause the rapid and complete bleaching of hard corals, even at extremely low concentrations. The effect of sunscreens is due to organic ultraviolet filters, which are able to induce the lytic viral cycle in symbiotic zooxanthellae with latent infections"; thus (7) given the rate of likely exposure based on production and use statistics and correlative factors: "10% of the world's coral reefs would be threatened by sunscreen-induced coral bleaching"); Downs, C. A., et al., *Toxicopathological Effects of the Sunscreen UV Filter Oxybenzone (Benzophenone – 3), on Coral Planulae and Cultured Primary Cells and Its Environmental Contamination in Hawaii and the U.S. Virgin Islands*, 70(2) Arch. Environ. Contam. Toxicol. 265-288 (Feb. 2016), available at https://pubmed.ncbi.nlm.nih.gov/26487337/ (accessed Feb. 20, 2022) ("***Downs Article 2016***") (linking coral bleaching to sunscreen pollution—specifically benzophenone, a degradant of octocrylene—finding concentrations of 75-1400 micrograms per liter sea water in U.S. Virgin Islands (75-1400 µg/L), and 0.8-19.2 micrograms per liter sea water in Hawaii (0.8-19.2 µg/L); finding lethal concentrations of benzophenone for larval (planula) corals in the *systophora pistillata* species for: (1) 20% of the tested population after 4 and 24 hours of exposure went from 0.062 to 8 micrograms per liter to 6.5 to 10 micrograms per liter (LC_{20} 0.062-8 µg/L (4 hours), LC_{20} 6.5-10µg/L (24 hours)); and (2) 50% of the tested population after 4, 8 and 24 hours of exposure went from 8 to 340 micrograms, to 3.1 to 16.8 milligrams, to 139 to 779 micrograms per liter (LC_{50} 8-340 µg/L (4 hours), LC_{50} 3.1-16.8 mg/L (8 hours), LC_{50} 139-779 µg/L (24 hours)); finding adverse effects of benzophenone on systophora pistillata include: deformity, bleaching, DNA damage, disruption of

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the endocrine system, causing the planula to become encased in its own skeleton; and concluding the Hawaiian and U.S. Virgin Island environmental concentrations of benzophenone exceed lethal levels and pose a hazard to coral reefs); Fel, Jean-Pierre, et al., *Photochemical response of the scleractinian coral Stylophora pistillata to some sunscreen ingredients*, 38 Coral Reefs 109-122 (2019), available at https://www.researchgate.net/publication/329991786_Photochemical_response_of_the_scleractinian_coral_Stylophora_pistillata_to_some_sunscreen_ingredients (accessed Feb. 20, 2022) ("***Fel Article***") (finding scleractinian coral *stylophora pistillata* 5-week exposure to avobenzone at nominal 5000 μg/L^{-1} concentration (which actually measured 87 μg/L^{-1}) reduced the photosynthetic efficiency of symbionts *symbiodiniaceae*, which provides energy/nutrients to corals); Gago-Ferrero, Pablo, et al., *An overview of UV-absorbing compounds (organic UV filters) in aquatic biota*, 404(9) Anal. Bioanal. Chem. 2597-2610 (Nov. 2012), available at https://pubmed.ncbi.nlm.nih.gov/22669305/ (Feb. 20, 2022) ("**Gago-Ferrero Article 2012**") (reviewing scientific literature regarding organic UV filters: (1) discussing the filters' physiochemical properties, noting high lipophilicity and poor biodegradability of UV filters, causing them to accumulate in effluent from wastewater treatment, sediments, and biota, and explaining that organic UV filters are expected to be stored faster than they are metabolized or excreted due to their low water solubility (lipophilic character), and finding mussels and fish store homosalate; (2) noting likely biomagnifcation of UV filters in predator-prey pairs; (3) noting expected exponential increase in tourism, heavy costal tourist activities, and the massive use of sunscreens that get deposited into waters from swimming and bathing (approximately 25% of sunscreens wash off), and waste treatment discharges; (4) noting marketing data from 2005 estimated 10,000 tons/year sunscreens; (5) explaining organic UV filters derive from ethylhexyl methoxycinnamate (octinoxate), benzophenones, salicylates (such as octisalate and homosalate), and butyl methoxydibenzoylmethane (avobenzone); (6) noting ubiquitous contamination of organic UV filters in oceans, likely due to sunscreens and personal care products, and their common toxic impact on the endocrine system; (7) reviewing scientific toxicity studies and noting, for example, (a) benzophenone (degradant of octocrylene) is toxic to mussels, sea urchins, marine bacterium, planktonic crustaceans, ciliate (reduced multixenobiotic resistance), bioluminescent bacterium (estrogenic activity), zebrafish (estrogenic activity, bioaccumulation, alteration of genetic expression, antiandrogenic activity), green algae (affected cell growth, pigment production, photosynthetic process, general toxicity, affected metabolic activity)), fathead minnows (feminization of males, alteration of gonads, decreased fertility and reproduction), Japanese medaka fish (hormonal changes, significantly reduced egg production), clownfish (death, disrupted swimming behavior), coral bleaching and reduced coral growth, (b) octocrylene toxic to ciliate, green algae, brine shrimp, flatworms (reduced growth rate), anemones (pedal disks weakly or not attached to container walls, tentacles or body columns not extended, no response to touch, discoloration), diatoms (decreased fluorescence), coral bleaching and reduced coral growth, (c) avobenzone toxic to ciliate, planktonic crustacean (immobilization, death), sea urchins, flatworms (reduced growth rate), anemones (pedal disks weakly or not attached to container walls, tentacles or body columns not extended, no response to touch, discoloration), diatoms (decreased fluorescence), coral bleaching and reduced coral growth, (d) homosalate is toxic to ciliate, brine shrimp, flatworms (reduced growth rate), anemones (pedal disks weakly or not attached to container walls, tentacles or body columns not extended, no response to touch, discoloration), diatoms (decreased fluorescence), and reduced coral growth, and (e) octisalate is toxic to green algae (affected metabolic activity), flatworms (reduced growth rate), anemones (pedal disks weakly or not attached to container walls, tentacles or body columns not extended, no response to touch, discoloration), diatoms (decreased fluorescence), coral bleaching; (8) linking coral bleaching to sunscreen pollution and the toxic impact of UV filters, among other factors, noting toxicity studies of corals that show: (a) exposure to avobenzone, benzophenone, octocrylene, octisalate, among others, resulted in large discharge of coral mucus (zooxanthellae and coral tissue) within 18-48 hours and complete bleaching, (b) exposure of planulae to benzophenone causing deformity, genotoxicity, ossification, and endocrine disruption, (c) benzophenone bioaccumulating in corals and causing coral bleaching, (d) exposure to homosalate, octocrylene, benzophenone, octisalate,

and avobenzone reduced coral growth; (9) emphasizing the importance of regulating "coral safe" and similar labeling to help consumers make informed decisions, which would in turn decrease individual impacts on the environment); He, Tangtian, et al., *Comparative toxicities of four benzophenone ultraviolet filters to two life stages of two coral species*, 651(2) Sci. Total Environ. 2391-2399 (Feb. 2019), available at https://pubmed.ncbi.nlm.nih.gov/30336428/ (accessed Feb. 20, 2022) ("***He Article I 2019***") (testing mortality of coral species pocillopora damicornis and seriatopora caliendrum after exposure to benzophenones (octocrylene degradant) ranging from 0.1 to 1000 μg/L, finding bleaching and mortality at 10 μg/L, bioaccumulation correlated with adverse effects, and performing risk assessment based on environmental concentrations that show corals at medium to high risk); He, Tangtian, et al., *Toxicological effects of two organic ultraviolet filters and a related commercial sunscreen product in adult corals*, 245 Environ. Pollut. 462-471 (Feb. 2019), available at https://pubmed.ncbi.nlm.nih.gov/30458376/ (accessed Feb. 20, 2022) ("***He Article II 2019***") (*in vivo* testing of mortality after 7-day exposure to sunscreen-water solution (which contained 33.50 μg/L octocrylene) on coral species *seriatopora caliendrum* and *pocillopora damicornis*, resulted in high mortality in *s. caliendrum* (66.7-83.3%) and *p. damicornis* (33.3-50%), concluding octocrylene bioaccumulates in corals, which increases its bioavailability to corals and exacerbates the toxicity of sunscreen products); McCoshum, Shaun, et al., *Direct and indirect effects of sunscreen exposure for reef biota*, 776 Hydrobiologia 139-146 (2016), available at https://link.springer.com/article/10.1007/s10750-016-2746-2 (accessed Feb. 20, 2022) ("***McCoshum Article***") (evaluating sunscreen concentration of 0.26 mL/L, containing homosalate, octocrylene, octisalate, and avobenzone, impact on flatworms *convolutriloba macropyga* with symbiotic algae, photosynthetic diatoms *nitzschia sp.*, *aiptasia* anemones, and pulse corals *xenia sp.*, after 72 hours of exposure, finding negative impact on estimations of population and significant growth reduction of exposed coral colonies and decreased florescence in *nitzschia sp.* Planktonic diatoms); Mitchelmore, C.L., et al., *Occurrence and distribution of UV-filters and other antropogenic contaminants in coastal surface water, sediment, and coral tissue from Hawaii*, 670 Sci. Total Environ. 398-410 (June 2019), available at https://pubmed.ncbi.nlm.nih.gov/30904653/ (accessed Feb. 20, 2022) ("***Mitchelmore Article 2019***") (finding organic UV filters, including benzophenone, octisalate, homosalte, and octocrylene, in the tissue of corals sampled from Hawaii); Narla, Shanthi, et. al., *Sunscreen: FDA regulation, and environmental and health impact*, 19(1) Photochem. Photobiol. Sci. 66-70 (Jan. 2020), available at https://pubmed.ncbi.nlm.nih.gov/31845952/ (accessed Feb. 20, 2022) ("***Narla Article***") (reviewing literature and noting: (1) several legislative bans in Hawaii, Florida, U.S. Virgin Islands, Paulau, and Mexico on UV filters, including benzophenone and octocrylene, and similar discussions in Brazil and the European Union, due to concerns of coral bleaching; (2) FDA research showing percutaneous absorption of avobenzone and octocrylene in human subjects; and (3) toxicity of oxybenzone, a type of benzophenone (which is an octocrylene degradant), including adverse endocrinological (hormonal) effects of in fish and rats, coral bleaching (inducing ossification and deformation of DNA in the larval stage), and lethal exposure after 4 hours to corals *in vitro* at concentrations as low as 8 to 340 $\mu g/L^{-1}$); Ouchene, Lydia, et al., *Hawaii and Other Jurisdictions Ban Oybenzone or Octionaxte Sunscreens Based on the Confirmed Adverse Environmental Effects of Sunscreen Ingredients on Aquatic Environments*, 23(6) J. Cutan. Med. Surg. 648-649, (Nov./Dec. 2019), available at https://pubmed.ncbi.nlm.nih.gov/31729915/ (accessed Feb. 20, 2022) ("***Ouchene Article***") (reviewing scientific literature, noting: (1) approximately 14,000 tons of sunscreens are estimated to affect coral reef habitats; (2) growing environmental concerns with the use of organic UV filters, including homosalate, octisalate, avobenzone, and octocrylene, which have been detected in water sources and supplies around the world; (3) frequent detection of octisalate, homosalate, and octocrylene in corals in Hawaii, revealing their omnipresence; (4) numerous studies detecting organic UV filters in marine organisms, including white fish, roach, perch, cod, rainbow trout, barb, chub, and mussels; (5) inefficacy of common wastewater treatments to remove organic UV filters; (6) accumulation of UV filters in marine organisms; (7) toxicity of UV filters that contribute to coral bleaching due to the activation of dormant viruses in symbiotic algae that corals then expel, causing coral death; (8) significant growth reduction of *xenia* coral colonies following exposure to sunscreen containing homosalate, oxybenzone, octocrylene,

octisalate, and avobenzone after 72 hours exposure; (9) *in vitro* studies showing UV filters adversely affect reproductive behavior in rats, egg production in fish, and brain and liver development in zebra fish; and (10) Pualau ban on sunscreens that contain octocrylene, *inter alia*); Slijkerman, D. M. E., et al., *Sunscreen Ecoproducts: Product Claims, Potential Effects and Environmental Risks of Applied UV Filters* (Wageningen Marine Research 2018), available at https://research.wur.nl/en/publications/sunscreen-ecoproducts-product-claims-potential-effects-and-enviro (accessed Feb. 20, 2022) ("***Slijkerman Article***") (summarizing toxicity of organic UV filters based on literary review, noting genotoxicity (DNA damage to corals by oxybenzone, a type of benzophenone, which is a degradant of octocrylene), endocrine toxicity (estrogenic disruption by octocrylene, homosalate, and oxybenzone), decreased reproductivity (oxybenzone effect on fish), developmental toxicity (oxybenzone and octocrylene on fish embryos), phototoxicity (photo degradation resulting in lipid, protein, and DNA damage by oxybenzone and octocrylene), toxicity to corals (coral bleaching, viral infections); testing toxicity of sunscreen product A (which contain 3% avobenzone, 7.5% homosalate, 5% octisalate, 2.75% octocrylene, and 2% oxybenzone) and product B (which contains 7% homosalate, 3% octocrylene, 3% avobenzone, and 3% octisalate) on rotifers and haptophyte algal species *s. constatum* and *s. armata* , finding the sunscreen killed 50% of the tested population at levels ranging from 0.4 to 4.8 mg/L); Stien, Didier, et al., *Metabolomics Reveal That Octocrylene Accumulates in Pocillopora Damicornis Tissues as Fatty Acid Conjugates and Triggers Coral Cell Mitochondrial Dysfunction*, 91(1) Analytical Chemistry 990-995 (Jan. 2019), available at https://pubmed.ncbi.nlm.nih.gov/30516955/ (accessed Feb. 15, 2022) ("***Stien Article 2019***") (evaluating corals, adult *pocillopora damicornis*, exposed to concentrations of octocrylene as low as 5, 50, 300, and 1000 micrograms per liter of water, and finding: (1) octocrylene including its analogues accumulate in the corals' tissues; and (2) octocrylene is toxic to corals because it causes mitochondrial dysfunction); Stien, Didier, et al., *A unique approach to monitor stress in coral exposed to emerging pollutants*, 10(1) Sci. Rep. 9601 (June 2020), available at https://pubmed.ncbi.nlm.nih.gov/32541793/ (accessed Feb. 15, 2022) ("***Stien Article 2020***") (finding corals, *pocillopora damicornis*, exposed to low concentrations of 50 micrograms of octocrylene or octisalate per liter of water showed metabolomic stress markers, including mitochondrial dysfunction and inflammation); Tibbetts, John, *Bleached, But Not by the Sun: Sunscreen Linked to Coral Damage*, 116(4) Environ. Health Perspect. A173 (Apr. 2008), available at https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2291012/ (accessed Feb. 16, 2022) ("***Tibbetts Article***") (noting, "Coral reefs are among the most biologically productive and diverse ecosystems in the world, providing food protein for half a billion people. But tropical reefs have begun dying from bleaching, with the frequency and spatial extent of such bleaching increasing dramatically over the past 20 years."; describing findings of researchers that tested several brand sunscreens *in situ* that showed, after 4 days of exposure to quantities as small as 10 microliters of sunscreen per liter of sea water, within only the first few hours, corals tested all over the world began to bleach as a result of the sunscreen's chemical ingredients, such as benzophenone (a degradant of octocrylene), stimulating dormant viral infections in zooanthellae (algae covering corals), which then caused viral hosts to explode, spilling viruses into surrounding water and spreading the infection to nearby coral communities; and concluding: "chemical compounds in sunscreen products can cause abrupt and complete bleaching of hard corals, even at extremely low concentrations."); Tsui, Mirabelle M. P., et al., *Occurrence, Distribution, and Fate of Organic UV Vilters in Coral Communities*, 51(8) Environ. Sci. Technol. 4182-4190 (Apr. 2017), available at https://pubmed.ncbi.nlm.nih.gov/28351139/ (accessed Feb. 15, 2022) ("***Tsui Article***") (studying the concentration of common organic UV filters, including octocrylene and benzophenone, a degradant of octocrylene, and finding these chemicals in coral tissues, as often as 65% of the sampled reefs or more, at concentrations in excess of threshold values for causing larval deformities and mortality); Wijgerde, Tim, et al., *Adding insult to injury: Effects of chronic oxybenzone exposure and elevated temperature on two reef-building corals*, 733 Sci. Total Environ. 139030 (Sept. 2020), available at https://pubmed.ncbi.nlm.nih.gov/32446051/ (accessed Feb. 20, 2022) ("***Wijgerde Article***") (finding corals *stylophora pistillata* and *acropora tenuis* 2-week exposure to organic UV filter oxybenzone, a type of benzophenone (which is a degradant of octocrylene), at a concentration as low as 0.06

13. **Coral Bleaching.** Relevant to this matter, certain chemicals found in sunscreens, like the Products, lead to the "bleaching" of coral reefs, resulting in death and damage, as depicted below.[12] According to studies, up to 14,000 tons of sunscreen are estimated to wash into reefs around the globe each year.[13] The chemical compounds found in sunscreens, like the Products, that wash into reefs can cause abrupt and complete bleaching of hard corals, even at extremely low concentrations.[14]

Left: Bleached Coral Right: Healthy Coral

μg/L^{-1}, significantly decreased zooxanthellae photosynthetic yield by 5% for both coral species and, when combined with a heat wave, killed <u>all</u> exposed *acropora tenuis* corals (0% survival rate)).

[12] *What is a Coral Reef*, SAVE THE REEF, https://savethereef.org/about.html (accessed Feb. 16, 2022) (coral bleaching images); *see also*, *supra*, footnote 10 (studies explaining prevalence of organic UV filters and Harmful Ingredients in coral tissues, toxic impact on corals and symbiotic organisms, and resultant coral bleaching).

[13] Danovaro, Roberto, et al., *Sunscreens Cause Coral Bleaching by Promoting Viral Infections*, 116(4) Environ. Health Perspect. 441-447 (Apr. 2008), available at https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2291018/ (accessed Feb. 20, 2022) ("***Danovaro Article 2008***") (discussing the correlative increase in production and consumption of personal care and cosmetic sunscreens and the detection of their common ingredients in aquatic organisms and waterways (noting research showing the estimated global release of sunscreens in coral reef areas to be 4,000 to 6,000 tons/year, average dose applications, average body surface areas, average number of daily applications, average number of tourists, and annual production of UV filters and expected usage (between 16,000 and 25,000 tons in tropical areas), and their finding that approximately 25% of applied sunscreen washes off during swimming and bathing after 20 minutes of immersion); Gago-Ferrero, Pablo, et al., *An overview of UV-absorbing compounds (organic UV filters) in aquatic biota*, 404(9) Anal. Bioanal. Chem. 2597-2610 (Nov. 2012), available at https://pubmed.ncbi.nlm.nih.gov/22669305/ (Feb. 20, 2022) ("**Gago-Ferrero Article 2012**") (noting expected exponential increase in tourism, heavy costal tourist activities; the massive use of sunscreens, which get deposited into waters from swimming and bathing (approximately 25% of sunscreens wash off), and waste treatment discharges; and noting marketing data from 2005 estimating 10,000 tons/year sunscreens); Ouchene, Lydia, et al., *Hawaii and Other Jurisdictions Ban Oybenzone or Octionaxte Sunscreens Based on the Confirmed Adverse Environmental Effects of Sunscreen Ingredients on Aquatic Environments*, 23(6) J. Cutan. Med. Surg. 648-649, (Nov./Dec. 2019), available at https://pubmed.ncbi.nlm.nih.gov/31729915/ (accessed Feb. 20, 2022) ("***Ouchene Article***") (noting approximately 14,000 tons of sunscreens are estimated to affect coral reef habitats).

[14] *See*, *supra*, footnote 10 (studies explaining prevalence of organic UV filters and Harmful Ingredients in coral tissues, toxic impact on corals and symbiotic organisms, and resultant coral bleaching).

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14. **NOAA Info-Graph.** The National Ocean Service, an agency within the U.S. Department of Commerce National Oceanic and Atmospheric Administration ("**NOAA**"), published the following infographic that demonstrates the manner in which sunscreens are frequently introduced to the aquatic environment and reefs, as well as the harm that their chemical ingredients, like those in the Products, can have on reefs and related marine life.[15]

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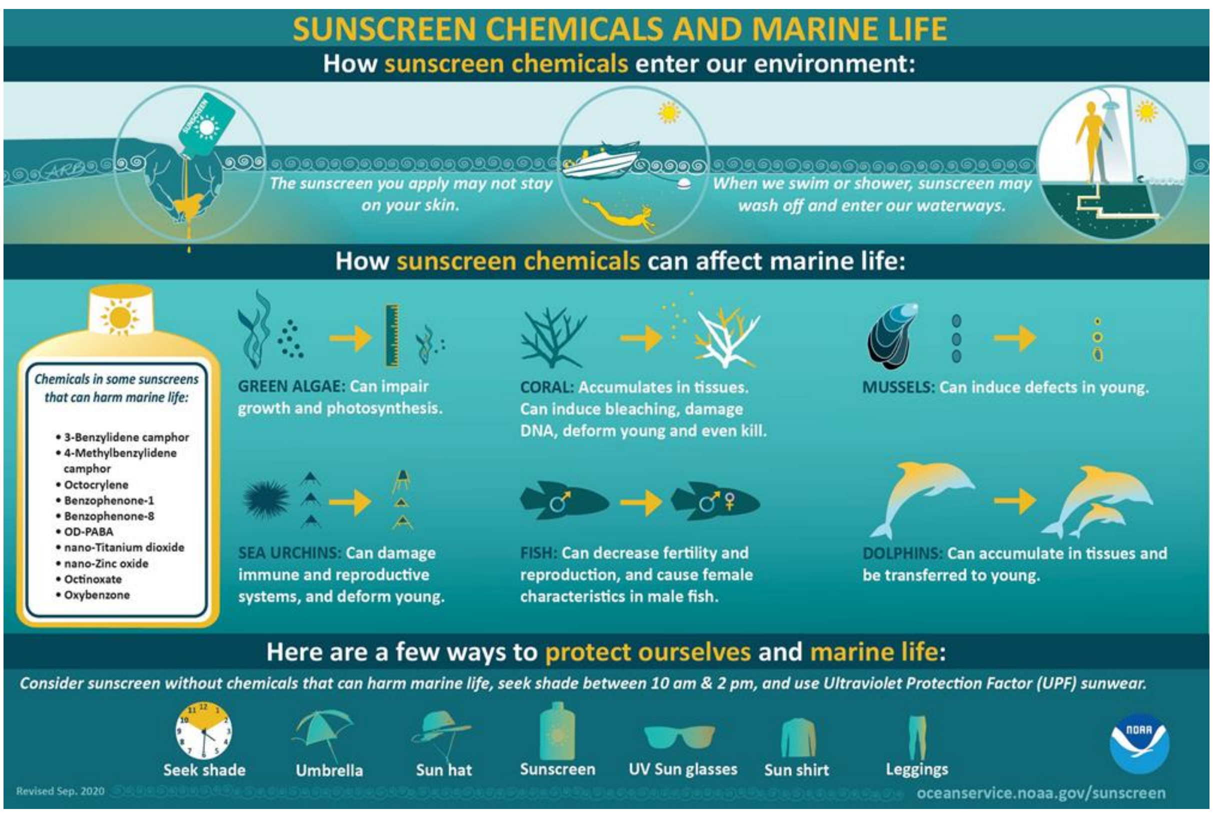

[15] *Skincare Chemicals and Coral Reefs*, NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION, https://oceanservice.noaa.gov/news/sunscreen-corals.html (accessed Feb. 16, 2022) (infographic).

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15. **Ubiquitous Contaminants Accumulation in Aquatic Environments**. Sunscreens applied to the skin, wash off when users swim or bath in the water. Waste treatment plants do not effectively eliminate these contaminants from the effluent discharged into the waterways. The extraordinary persistence and accumulation of sunscreen ingredients, in particular the Harmful Ingredients at issue here, is well documented throughout a multitude of water systems, including natural and manmade water bodies, wastewater, groundwater, and tap water. Organic UV filters from personal care products, in particular sunscreens, are found throughout aquatic environments and in the tissues of a multitude of organisms, including corals. The environmental concentration of these contaminants has increased to point where several researchers refer to them as ubiquitous in marine environments, particularly coastal regions that attract tourists and provide recreational water activities.[16]

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[16] *Id.* (NOAA infographic); *see*, *supra*, footnote 12 (describing the production and use of sunscreens); footnote 10 (describing the presence of UV filters, including Harmful Ingredients, in coral tissues and related organisms); Bozec, Y. M., et al., *Impacts of coastal development on ecosystem structure and function of Yucatan coral reefs, Mexico*, In proceedings of the 11th International Coral Reef Symposium, Fort Lauderdale, FL, USA, 7-11 July 2008, Volume 2, pp. 691-695, available at https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.708.266&rep=rep1&type=pdf (accessed Feb. 15, 2022) ("***Bozec Article***") (comparing costal reefs in low and high tourist development areas with varying human density to find major shifts in the structure and function of coral reefs, including decreased fish functional diversity, correlated with high tourist development and human density); Brausch, J. M., et al., *A review of personal care products in the aquatic environment: Environmental concentrations and toxicity*, 82 Chemosphere 1518-1532 (2011), available at https://pubmed.ncbi.nlm.nih.gov/21185057/ (accessed Feb. 15, 2022) ("***Brausch Article***") (noting the continuance release of personal care products, like sunscreens, into aquatic environments, that are biologically active and persistent, including discussion of acute and chronic toxicity and environmental data that evidence UV filters have adverse endocrine effects on aquatic organisms); Gago-Ferrero, Pablo, et al., *An overview of UV-absorbing compounds (organic UV filters) in aquatic biota*, 404(9) Anal. Bioanal. Chem. 2597-2610 (Nov. 2012), available at https://pubmed.ncbi.nlm.nih.gov/22669305/ (Feb. 20, 2022) ("***Gago-Ferrero Article 2012***") (reviewing scientific literature regarding organic UV filters: (1) discussing the filters' physiochemical properties, noting high lipophilicity and poor biodegradability of UV filters, causing them to accumulate in effluent from wastewater treatment, sediments, and biota, and explaining that organic UV filters are expected to be stored faster than they are metabolized or excreted due to their low water solubility (lipophilic character), and finding mussels and fish store homosalate; (2) noting likely biomagnifcation of UV filters in predator-prey pairs; (3) noting expected exponential increase in tourism, heavy costal tourist activities, and the massive use of sunscreens that get deposited into waters from swimming and bathing (approximately 25% of sunscreens wash off), and waste treatment discharges; (4) noting marketing data from 2005 estimated 10,000 tons/year sunscreens; (5) explaining organic UV filters derive from ethylhexyl methoxycinnamate (octinoxate), benzophenones, salicylates (such as octisalate and homosalate),

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and butyl methoxydibenzoylmethane (avobenzone); and (6) noting ubiquitous contamination of organic UV filters in oceans, likely due to sunscreens and personal care products, and their common toxic impact on the endocrine system); Gago-Ferrero, Pablo, et al., *First Determination of UV Filters in Marine Mammals. Octocrylene Levels in Franciscana Dolphins*, 47(11) Environmental Science & Technology 5619-5625 (June 2013), available at https://pubmed.ncbi.nlm.nih.gov/23627728/ ("***Gago-Ferrero Article 2013***") (finding octocrylene in liver tissue of large sample of marine mammals, the franciscana dolphin (pontoporia blainvillei), ranging between 89 to 782 nanograms per gram of lipid weight demonstrating the "occurrence of UV filters in marine mammals worldwide"); Hernandez-Pedraza, Miguel, et al., *Toxicity and Hazards of Biodegradable and Non-Biodegradable Sunscreens to Aquatic Life of Quintana Roo, Mexico*, 12(8) Sustainability 3270 (Apr. 17, 2020), available at https://www.sciencedirect.com/science/article/pii/S0160412019325656?via%3Dihub (accessed Feb. 15, 2022) ("***Hernandez-Pedraza Article***") (evaluating sunscreens containing the Harmful Ingredients in, for example, Banana Boat and Hawaiian Tropic sunscreens, finding the presence of organic UV filters, such as the Harmful Ingredients, ubiquitous in coral reef and coastal areas, and stating: "The contamination of water caused by the intensive use of sunscreens is an environmental hazard. The tourism activity in coastal areas directly represents a major source of the contamination of marine and freshwater environments, because sunscreens contain organic and inorganic compounds that have adverse effects on the aquatic life [footnote omitted]. These ingredients mostly reach the aquatic systems through the washing off of topical products used by tourists and the local population, which eventually contaminate the marine environments, freshwater systems (dolines and karstic lakes) and wildlife [footnote omitted]. . . . The discharge of sunscreens in tourist destinations is high, and in coastal tourist destinations with aquatic activities taking place in direct sunlight, sunscreen use increases and the problem is magnified [footnote omitted and discussing minimum and maximum levels detected in samples of seawater, wastewater treatment plants, and surface water to conclude]. . . . This presents an adverse scenario for the ecosystem, aquatic life and human health. . . . It is essential to mention that all sunscreens contain several highly toxic ingredients; unfortunately, their adverse effects are devastating, inducing moderate to high mortality according to scientific reports. . . . Their adverse effects on the biota can cause endocrine disruption, bioaccumulation or biomagnification [footnotes omitted]."); Manova, Eva., et al., *Organic UV filters in personal care products in Switzerland: a survey of occurrence and concentrations*, 216(4) Int'l. J. Hyg. Environ. Health 508-514 (Sept. 2012), available at https://pubmed.ncbi.nlm.nih.gov/23026542/#:~:text=Organic%20ultraviolet%20(UV)%20filters%20are,personal%20care%20products%20(PCPs) ("***Manova Article***") (surveying the frequency of occurrence and concentrations of organic UV filters, such as avobenzone (BMBM) and octocrylene (OCT), in 51% and 43%, respectively, of personal care products, including sunscreens, at concentrations that averaged 2.6 and 6.0% respectively); Ouchene, Lydia, et al., *Hawaii and Other Jurisdictions Ban Oybenzone or Octionaxte Sunscreens Based on the Confirmed Adverse Environmental Effects of Sunscreen Ingredients on Aquatic Environments*, 23(6) J. Cutan. Med. Surg. 648-649, (Nov./Dec. 2019), available at https://pubmed.ncbi.nlm.nih.gov/31729915/ ("***Ouchene Article***") (reviewing scientific literature, noting: (1) approximately 14,000 tons of sunscreens are estimated to affect coral reef habitats; (2) growing environmental concerns with the use of organic UV filters, including homosalate, octisalate, avobenzone, and octocrylene, which have been detected in water sources and supplies around the world; (3) frequent detection of octisalate, homosalate, and octocrylene in corals in Hawaii, revealing their omnipresence; (4) numerous studies detecting organic UV filters in marine organisms, including white fish, roach, perch, cod, rainbow trout, barb, chub, and mussels; (5) inefficacy of common wastewater treatments to remove organic UV filters; (6) accumulation of UV filters in marine organisms); Poiger, T., et al., *Occurrence of UV filter compounds from sunscreens in surface waters: Regional mass balance in two Swiss lakes*, 55 Chemosphere 951-963 (2004), available at https://www.sciencedirect.com/science/article/abs/pii/S0045653504000426 (Feb. 15, 2022) ("***Poiger Article***") (finding common UV filters, octocrylene, avobenzone, and benzophenone *inter alia*, present at higher concentrations in lakes extensively used for recreational activities compared to remote and less frequented lakes); Ramos, Sara, et al., *Advances in analytical methods and*

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D. Harmful Ingredients' Adverse Effects On Reefs

16. **Harmful Ingredient General Properties.** Avobenzone, homoslate, octrocrylene, and octisalate (collectively and/or individually, "**Harmful Ingredient(s)**") are chemical organic UV filters that are hazardous to reefs because they can harm or kill reefs, including corals and their inhabiting and/or co-dependent marine life. Organic chemical UV filters share several of the same properties: they absorb UV radiation (as opposed to inorganic UV filters that refract UV radiation); they bioaccumulate (process of accumulation of chemicals in an organism that takes place if the rate of intake exceeds the rate of excretion) and biomagnify within food webs (process by which the concentration of a chemical increases with increasing trophic levels—e.g., one animal consumes plants containing the chemicals, which in turn increases its concentration of the chemical); they are not typically water soluble or biodegradable; they degrade as a result photolysis (exposure to light); and they often produce hazardous disinfectant by-products when exposed to, for example, chlorination and bromination used in water treatment plants or man-made bodies of water. Organic UV filters in addition to the Harmful Ingredients include, for example, oxybenzone, a type of benzophenone, which is a degradant of octocrylene. The toxicity of organic UV filters, such as the

occurrence of organic UV-filters in the environment—A review, 526 Sci. Total Environ. 278-311 (Sep. 2015), available at https://pubmed.ncbi.nlm.nih.gov/25965372/ (accessed Feb. 15, 2022) ("***Ramos Article***") (discussing the prevalence and persistent input of organic UV filters, their degradants, by-products, and derivatives, in wastewater, fresh and sea water bodies, tap and ground water, as well as evaluating environmental risks through review of their physicochemical properties, toxicity, and environmental degradation); Ruszkiewicz, Joanna, et al., *Neurotoxic effect of active ingredients in sunscreen products, a contemporary review*, 4 Toxicol. Rep. 245-259 (May 2017), available at https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5615097/#bib0635 ("***Ruszkiewicz Article***") (discussing UV filters, such as octocrylene, avobenzone, homosalate, and octisalate, increasing usage, persistent input, accumulation of UV filters in the environment, including studies showing their bioaccumulation and food web biomagnification, and noting the average single-dose of 40 grams of sunscreen, which typically entails about 10% active ingredients or 4 grams per dose, is multiplied by each application, finding the omnipresence of organic UV filters in water systems, including swimming or drinking water, tap and groundwater, wastewater treatment plants, and fresh and salt water bodies, concluding: "Due to the widespread application of these compounds in many daily-use products and growing awareness of the risk associated with the sun exposure, the market of UV filters increases every year. Thus, increasing usage, persistent input and accumulation in environment is becoming an issue of great concern because of threat to human health, but also to the environment. UV filters were found to be ubiquitous in many aquatic systems and aquatic biota.")

Harmful Ingredients, is well documented throughout numerous scientific articles, particularly their adverse impact on the endocrine system of numerous aquatic organisms and animals.[17] [18]

[17] *See*, *supra*, footnote 10 (studies explaining prevalence of organic UV filters and Harmful Ingredients in coral tissues, toxic impact on corals and symbiotic organisms, and resultant coral bleaching); *see also*, *infra*, footnotes 18 (avobenzone toxicity), 19 (homosalate toxicity), 20 (octocrylene toxicity), and 21 (octisalate toxicity); Diaz-Cruz, M. Silvia, et al., *Chemical analysis and ecotoxicological effects of organic UV-absorbing compounds in aquatic ecosystems*, 28(6) TrAC Trends in Anal. Chem. 708-717 (June 2009), available at https://www.sciencedirect.com/science/article/abs/pii/S0165993609000727?via%3Dihub ("***Diaz-Cruz Article***") (discussing increasing prevalence of organic UV filters in personal care products, like sunscreens, that have a propensity for rapid accumulation and demonstrated deleterious health effects, including in vitro and in vivo hormonal activity, decrease in fertility and reproduction, and feminization of male fish); Downs, Craig A., et. al., *Benzophenone Accumulates over Time from the Degradation of Octocrylene in Commercial Sunscreen Products*, ACS (2021), available at https://pubs.acs.org/doi/10.1021/acs.chemrestox.0c00461 (accessed Feb. 16, 2022) ("***Downs Article 2021***") (testing numerous commercial sunscreens, including two single ingredient sources of octocrylene, under the FDA accelerated stability aging protocol for 6 weeks to find that octocrylene naturally degrades into benzophenone through retro-aldol condensation and noting the United States ban on benzophenone in food products and packaging because it is a mutagen, carcinogen, and endocrine disruptor, as well as California's Proposition 65 no-safe-harbor ban on benzophenone in any personal care products, which includes sunscreens); Gago-Ferrero, Pablo, et al., *An overview of UV-absorbing compounds (organic UV filters) in aquatic biota*, 404(9) Anal. Bioanal. Chem. 2597-2610 (Nov. 2012), available at https://pubmed.ncbi.nlm.nih.gov/22669305/ (Feb. 20, 2022) ("***Gago-Ferrero Article 2012***") (reviewing scientific literature regarding organic UV filters: (1) discussing the filters' physiochemical properties, noting high lipophilicity and poor biodegradability of UV filters, causing them to accumulate in effluent from wastewater treatment, sediments, and biota, and explaining that organic UV filters are expected to be stored faster than they are metabolized or excreted due to their low water solubility (lipophilic character), and finding mussels and fish store homosalate; (2) noting likely biomagnifcation of UV filters in predator-prey pairs; (3) explaining organic UV filters derive from ethylhexyl methoxycinnamate (octinoxate), benzophenones, salicylates (such as octisalate and homosalate), and butyl methoxydibenzoylmethane (avobenzone); (4) reviewing scientific toxicity studies and noting, for example, (a) benzophenone (degradant of octocrylene) is toxic to mussels, sea urchins, marine bacterium, planktonic crustaceans, ciliate (reduced multixenobiotic resistance), bioluminescent bacterium (estrogenic activity), zebrafish (estrogenic activity, bioaccumulation, alteration of genetic expression, antiandrogenic activity), green algae (affected cell growth, pigment production, photosynthetic process, general toxicity, affected metabolic activity), fathead minnows (feminization of males, alteration of gonads, decreased fertility and reproduction), Japanese medaka fish (hormonal changes, significantly reduced egg production), clownfish (death, disrupted swimming behavior), coral bleaching and reduced coral growth, (b) octocrylene toxic to ciliate, green algae, brine shrimp, flatworms (reduced growth rate), anemones (pedal disks weakly or not attached to container walls, tentacles or body columns not extended, no response to touch, discoloration), diatoms (decreased fluorescence), coral bleaching and reduced coral growth, (c) avobenzone toxic to ciliate, planktonic crustacean (immobilization, death), sea urchins, flatworms (reduced growth rate), anemones (pedal disks weakly or not attached to container walls, tentacles or body columns not extended, no response to touch, discoloration), diatoms (decreased fluorescence), coral bleaching and reduced coral growth, (d) homosalate is toxic to ciliate, brine shrimp, flatworms (reduced growth rate), anemones (pedal disks weakly or not attached to container walls, tentacles or body columns not extended, no response to touch, discoloration), diatoms (decreased fluorescence), and reduced coral growth, and (e) octisalate is toxic to green algae (affected metabolic activity), flatworms (reduced growth rate), anemones (pedal disks weakly or not attached to container walls, tentacles or body columns not extended, no response to touch,

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discoloration), diatoms (decreased fluorescence), coral bleaching; and (5) linking coral bleaching to sunscreen pollution and the toxic impact of UV filters, among other factors, noting toxicity studies of corals that show: (a) exposure to avobenzone, benzophenone, octocrylene, octisalate, among others, resulted in large discharge of coral mucus (zooxanthellae and coral tissue) within 18-48 hours and complete bleaching, (b) exposure of planulae to benzophenone causing deformity, genotoxicity, ossification, and endocrine disruption, (c) benzophenone bioaccumulating in corals and causing coral bleaching, (d) exposure to homosalate, octocrylene, benzophenone, octisalate, and avobenzone reduced coral growth); Giokas, Dimosthenis L., et al., *UV filters: From sunscreens to human body and the environment*, 26 TrAC Trends Anal. Chem. 360-374 (2007), available at https://www.sciencedirect.com/science/article/abs/pii/S0165993607000726 ("***Giokas Article***") (evaluating organic chemical ultraviolet (UV) filters, like the Harmful Ingredients, that share common chemical properties, including: the filtration of ultraviolet (UV) radiation through absorption, their resultant molecular break down through photolysis (absorption of light), and their absorption through body surfaces, like skin, at low concentrations); He, Tangtian, et al., *Comparative toxicities of four benzophenone ultraviolet filters to two life stages of two coral species*, 651(2) Sci. Total Environ. 2391-2399 (Feb. 2019), available at https://pubmed.ncbi.nlm.nih.gov/30336428/ (accessed Feb. 20, 2022) ("***He Article I 2019***") (finding bioaccumulation of UV filters, particularly benzophenones (degradant of octocrylene), in coral species pocillopora damicornis and seriatopora caliendrum); Hernandez-Pedraza, Miguel, et al., *Toxicity and Hazards of Biodegradable and Non-Biodegradable Sunscreens to Aquatic Life of Quintana Roo, Mexico*, 12(8) Sustainability 3270 (Apr. 17, 2020), available at https://www.sciencedirect.com/science/article/pii/S0160412019325656?via%3Dihub (accessed Feb. 15, 2022) ("***Hernandez-Pedraza Article***") (discussing common properties of sunscreen UV filters); Lebedev, Albert T., et al., *Identification of avobenzone by-products formed by various disinfectants in different types of swimming pool waters*, 173 Environ. Int'l. 105495 (Apr. 2020), available at https://www.sciencedirect.com/science/article/pii/S0160412019325656?via%3Dihub (accessed Feb. 15, 2022) ("***Lebedev Article***") (Avobenzone, which undergoes chlorination and bromination disinfection reactions in fresh and sea water, destabilizes and produces a multitude of by-products that are either known to be more toxic than its original form or share a molecular structure and chemical properties with compounds that likewise have a greater toxicity than its original form); Popek, Emma, *Environmental Chemical Pollutants*, SAMPLING AND ANALYSIS OF ENVIRONMENTAL CHEMICAL POLLUTANTS, A COMPLETE GUIDE (2d Ed., Elsevier, 2018), at pp. 13-69 (describing generally bioaccumulation and biomagnification); Ramos, Sara, et al., *Advances in analytical methods and occurrence of organic UV-filters in the environment—A review*, 526 Sci. Total Environ. 278-311 (Sep. 2015), available at https://pubmed.ncbi.nlm.nih.gov/25965372/ ("***Ramos Article***") (discussing the prevalence and persistent input of organic UV filters, their degradants, by-products, and derivatives, in wastewater, fresh and sea water bodies, tap and ground water, as well as evaluating environmental risks through review of their physicochemical properties, toxicity, and environmental degradation); Ruszkiewicz, Joanna, et al., *Neurotoxic effect of active ingredients in sunscreen products, a contemporary review*, 4 Toxicol. Rep. 245-259 (May 2017), available at https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5615097/#bib0635 (accessed Feb. 20, 2022) ("***Ruszkiewicz Article***") (discussing UV filters, such as octocrylene, avobenzone, homosalate, and octisalate, increasing usage, persistent input, and accumulation of UV filters in the environment, including studies showing their bioaccumulation and food web biomagnification, and stating: "The endocrine disruptive and developmental toxicity of many organic UV filters in experimental models is well established, these filters seem to be associated with altered estrogen, androgen and progesterone activity, reproductive and developmental toxicity and impaired functioning of the thyroid, liver or kidneys, reviewed elsewhere" (citing several articles)); Sanchez-Quiles, David, et al., *Are sunscreens a new environmental risk associated with coastal tourism*, 83 Environ. Int'l. 158-170 (Oct. 2015), available at https://pubmed.ncbi.nlm.nih.gov/26142925/ (accessed Feb. 15, 2022) ("***Sanchez-Quiles Article***") (noting the growth of UV-filters in cosmetics and sunscreens, correlated increasing prevalence of these compounds in aquatic environments, and toxicity of organic UV filters demonstrated in aquatic organisms, including the inhibited growth of phytoplankton, as well as their tendency to bioaccumulate in these food webs, that magnify the

17. **Harmful Ingredients in the Products.** As summarized below, the Products contain the following concentrations of the Harmful Ingredients:

Exhibit 1A: Banana Boat Sport Ultra Sunscreen Lotion SPF 15

- Avobenzone: 2.0%
- Homosalate: 6.0%
- Octisalate: 4.5%
- Octocrylene: 3.0%

Exhibit 1B-D: Banana Boat Sport Ultra Sunscreen Lotion SPF 30

- Avobenzone: 2.7%
- Homosalate: 6.0%
- Octisalate: 4.5%
- Octocrylene: 4.5%

impact of UV filter pollutants on the marine system); Tovar-Sanchez, Antonio, et al., *Sunscreen Products as Emerging Pollutants to Coastal Waters*, 8(6) PLoS One e65451 (June 2013), available at https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3673939/#pone.0065451.s004 ("***Tovar-Sanchez Article***") (noting that, for example, water insolubility compounds common to sunscreens inhibit degradation and contribute to the contaminants' persistence).

[18] Much of the scientific literature studying the toxicity of various contaminants on aquatic life is conducted using model species, such as Japanese rice fish, benthic species like the harlequin fly, or zebrafish, a recommended "fish receptor model" for evaluating toxicology in aquatic life. *See, e.g.*, Dai, Yu-jie, et al., *Zebrafish as a model system to study toxicology*, 33(1) Environmental Toxicology and Chemistry 11-17 (Jan. 2014), available at https://setac.onlinelibrary.wiley.com/doi/10.1002/etc.2406#:~:text=Zebrafish%20can%20be%20used%20as,in%20reproductive%20and%20nervous%20systems. (accessed Feb. 20, 2022) ("***Dai Article***") ("The zebrafish has been widely used as a prominent model organism in different fields because of its small size, low cost, diverse adaptability, short breeding cycle, high fecundity, and transparent embryos. Recent studies have demonstrated that zebrafish sensitivity can aid in environmental contaminant"); Bambino, Kathryn, et al., *Zebrafish in Toxicology and Environmental Health*, Curr. Top. Dev. Biol. (2017), available at https://pubmed.ncbi.nlm.nih.gov/28335863/ (accessed Jan. 22, 2022) ("***Bambino Article***") ("Zebrafish are at the forefront of toxicology research; this system has been widely used as a tool to detect toxins in water samples and to investigate the mechanisms of action of environmental toxins and their related diseases."); *Toxicity Screening using Zebrafish Embryos: Form and Function*, ENVIRONMENTAL PROTECTION AGENCY, https://www.epa.gov/chemical-research/toxicity-screening-using-zebrafish-embryos-form-and-function (accessed Jan. 22, 2022); Yan, Salihong, et al., *Reproductive toxicity and estrogen activity in Japanese medaka (Oryzias latipes) exposed to environmentally relevant concentrations of octocrylene*, 261 Environ. Pllut. 114104 (June 2020), available at https://pubmed.ncbi.nlm.nih.gov/32045793/ (accessed Feb. 15, 2022) ("***Yan Article***") (examining toxicity of octocrylene to Japanese rice fish, a model organism extensively used in toxicology research); Muniz-Gonzalez, Ana-Belen, et al., *Unveiling complex responses at the molecular level: Transcriptional alterations by mixtures of bisphenol A, octocrylene, and 2'-ethylhexyl 4-(dimethylamino) benzoate on Chrinomus riparius*, 206 Ectoxicology and Environmental Safety 111199 (Sept. 2020), available at https://www.sciencedirect.com/science/article/pii/S0147651320310381?via%3Dihub (accessed Feb. 15, 2022) ("***Muniz-Gonzalez Article***") (evaluating molecular mechanisms in cellular response to octocrylene and other compounds using chrionomus riparius larvae, an organism used to study transcription in invertebrates).

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<u>Exhibit 1E-G: Banana Boat Sport Ultra Sunscreen Lotion SPF 50</u>
- Avobenzone: 2.7%
- Homosalate: 9.0%
- Octisalate: 4.5%
- Octocrylene: 6.5%

<u>Exhibit 1H: Banana Boat Sport Ultra Sunscreen Spray SPF 15</u>
- Avobenzone: 1.6%
- Homosalate: 4.0%
- Octocrylene: 4.5%

<u>Exhibit 1I-J: Banana Boat Sport Ultra Sunscreen Spray SPF 30</u>
- Avobenzone: 2.0%
- Homosalate: 6.0%
- Octocrylene: 6.0%

<u>Exhibit 1K-L: Banana Boat Sport Ultra Sunscreen Spray SPF 50</u>
- Avobenzone: 2.7 %
- Homosalate: 9 %
- Octisalate: 4.5%
- Octocrylene: 6 %

<u>Exhibit 1M: Banana Boat Sport Ultra Sunscreen Stick SPF 50</u>
- Avobenzone: 2.7%
- Homosalate: 9.0%
- Octisalate: 4.5%
- Octocrylene: 9.0%

<u>Exhibit 1N: Banana Boat Sport Ultra Sunscreen Face Lotion SPF 30</u>
- Avobenzone: 2.7 %
- Homosalate: 6 %
- Octisalate: 4.5%
- Octocrylene: 4.5 %

<u>Exhibit 1O-P: Banana Boat Sport Cool Zone Sunscreen Spray SPF 30</u>
- Avobenzone: 2.0%
- Homosalate: 6.0%
- Octisalate: 4.5%
- Octocrylene: 6.0%

<u>Exhibit 1Q-R: Banana Boat Sport Cool ZoneSunscreen Spray SPF 50</u>
- Avobenzone: 2.7%
- Homosalate: 9.0%
- Octisalate: 4.5%
- Octocrylene: 7.0%

18. **Avobenzone.** Like all Harmful Ingredients, and common to organic chemical UV filters, octocrylene bioaccumulates and biomagnifies in aquatic species, including corals, which increases its bioavailability and, in turn, exacerbates its toxicity. Studies show avobenzone have a number of toxicities to aquatic life. Notably, it reduces the photosynthetic efficiency of coral symbionts (alga and plants that provide corals with their energy and nutrients), decreases plant respiration, causes the overproduction of reactive oxygen species (which reduces resilience and

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causes secondary pathologies), damages the structure and function of plant cells, and inhibits plant growth. Indeed, studies on the toxicity of UV filters, including avobenzone, showed that, within as little as 72 hours of exposure, coral growth reduction occurs, and within 18-48 hours corals expelled coral mucous (zooxanthellae and coral tissue), resulting in complete bleaching and death. Studies have also shown a wide range of toxicities to a number of aquatic organisms and representative or other species, including: corals and symbiotic algae, haptophyte algal species, planktonic crustaceans, brine shrimp, ciliate, sea urchins, flatworms, anemones, diatoms, fish, rotifers, rats, humans. For example, exposure to avobenzone for planktonic crustaceans causes behavior disruption (inhibited phototactic response and immobilization) and death. It kills algae, rotifers, and brine shrimp. Anemones experience a multitude of abnormalities, such as weak or unattached pedal disks, non-extended tentacles and body columns, no response to touch, and discoloration. Avobenzone leads to reproductive dysfunction and reduced egg production. It is a known endocrine disrupter, which leads to developmental abnormalities in the brain and liver. When treated at wastewater plants with chlorination or bromination, avobenzone produces disinfectant biproducts more toxic than in its original form.[19]

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[19] Boyd, Aaron, et al., *A burning issue: The effect of organic ultraviolet filter exposure on the behaviour and physiology of Daphnia magna*, 750 Sci. of the Total Environ. 141707 (Jan. 2021), available at https://www.sciencedirect.com/science/article/abs/pii/S0048969720352360 (accessed Feb. 15, 2022) ("***Boyd Article***") (evaluating toxicity of UV filters, including avobenzone and octocrylene, in planktonic crustaceans (*daphnia magna*) at environmental concentrations, finding: (1) after 48 hours of exposure, daphnid's phototactic response (movement towards or away from light) disrupted; (2) delayed mortality (death) occurred up to 7 days post-exposure to concentrations as low as 200 micrograms of avobenzone and octocrylene per liter of solution; (3) chronic exposure over 21 days to 7.5 micrograms of octocrylene per liter of solution resulted in death within 7 days, while such exposure to avobenzone caused reproductive and metabolic abnormalities; (4) exposure to avobenzone and octocrylene induced behavioral and physiological disruption at environmental concentrations); Danovaro, Roberto, et al., *Sunscreens Cause Coral Bleaching by Promoting Viral Infections*, 116(4) Environ. Health Perspect. 441-447 (Apr. 2008), available at https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2291018/ ("***Danovaro Article 2008***") ((1) noting research findings demonstrate UV filters bioaccumulate in and have toxic effects on aquatic organisms, including their toxic by-products; (2) conducting, from 2003 to 2007, various *in situ* testing of sunscreens on coral branches from the *acropora*, *stylophora pistillata*, and *millepora complanate* species, which contained *inter alia* avobenzone (BMDBM), octisalate (EHS), octocrylene (OCT), and the octocrylene degradant, benzophenone (BZ), to find: "In all replicates and at all sampling sites, sunscreen addition even in very low quantities (i.e., 10 μL/L) resulted in the release of large amounts of coral mucous (composed of zooxanthellae and coral tissue) within 18–48 [hours of exposure], and complete bleaching of hard corals within 96 [hours of exposure] [citation omitted]. Different sunscreen brands, protective factors, and concentrations were compared, and all treatments caused bleaching of hard corals, although the rates of bleaching were

faster when larger quantities were used [citation omitted]. . . . We tested sunscreen (10 µL/L) containing concentrations of UV filters higher than those reported in most natural environments. At the same time, the coral response to sunscreen exposure was not dose dependent, as the same effects were observed at low and high sun-screen concentrations. Therefore, we hypothesize that UV filters can have potentially negative impacts even at concentrations lower than those used in the present study."; and (3) concluding: "[s]unscreens cause the rapid and complete bleaching of hard corals, even at extremely low concentrations. The effect of sunscreens is due to organic ultraviolet filters, which are able to induce the lytic viral cycle in symbiotic zooxanthellae with latent infections"; and (4) given the rate of likely exposure based on production and use statistics and correlative factors: "10% of the world's coral reefs would be threatened by sunscreen-induced coral bleaching"); Fel, Jean-Pierre, et al., *Photochemical response of the scleractinian coral Stylophora pistillata to some sunscreen ingredients*, 38 Coral Reefs 109-122 (2019), available at https://www.researchgate.net/publication/329991786_Photochemical_response_of_the_scleractinian_coral_Stylophora_pistillata_to_some_sunscreen_ingredients ("***Fel Article***") (finding scleractinian coral *stylophora pistillata* 5-week exposure to avobenzone at nominal 5000 $\mu g/L^{-1}$ concentration (which actually measured 87 $\mu g/L^{-1}$) reduced the photosynthetic efficiency of symbionts *symbiodiniaceae*, which provides energy/nutrients to corals); Gago-Ferrero, Pablo, et al., *An overview of UV-absorbing compounds (organic UV filters) in aquatic biota*, 404(9) Anal. Bioanal. Chem. 2597-2610 (Nov. 2012), available at https://pubmed.ncbi.nlm.nih.gov/22669305/ (Feb. 20, 2022) ("***Gago-Ferrero Article 2012***") (reviewing scientific toxicity studies and noting, for example, avobenzone is toxic to ciliate, planktonic crustacean (causing immobilization, death), sea urchins, flatworms (reduced growth rate), anemones (pedal disks weakly or not attached to container walls, tentacles or body columns not extended, no response to touch, discoloration), diatoms (decreased fluorescence), coral bleaching and reduced coral growth; and linking coral bleaching to sunscreen pollution and the toxic impact of UV filters, among other factors, noting toxicity studies of corals that show: (a) exposure to avobenzone, benzophenone, octocrylene, octisalate, among others, resulted in large discharge of coral mucus (zooxanthellae and coral tissue) within 18-48 hours and complete bleaching, (b) and exposure to homosalate, octocrylene, benzophenone, octisalate, and avobenzone reduced coral growth); Lebedev, Albert T., et al., *Identification of avobenzone by-products formed by various disinfectants in different types of swimming pool waters*, 173 Environ. Int'l. 105495 (Apr. 2020), available at https://www.sciencedirect.com/science/article/pii/S0160412019325656?via%3Dihub (accessed Feb. 15, 2022) ("***Lebedev Article***") (finding avobenzone, which undergoes chlorination and bromination disinfection reactions in fresh and sea water, destabilizes and produces a multitude of by-products that are either known to be more toxic than its original form or share a molecular structure and chemical properties with compounds that likewise have a greater toxicity than its original form); McCoshum, Shaun, et al., *Direct and indirect effects of sunscreen exposure for reef biota*, 776 Hydrobiologia 139-146 (2016), available at https://link.springer.com/article/10.1007/s10750-016-2746-2 ("***McCoshum Article***") (testing sunscreen concentration of 0.26 mL/L, containing homosalate, octocrylene, octisalate, and avobenzone, impact on flatworms *convolutriloba macropyga*, symbiotic algae, photosynthetic diatoms *nitzschia sp.*, *aiptasia* anemones, and pulse corals *xenia sp.*, after 72 hours of exposure, finding negative impact on estimations of population and significant growth reduction of exposed coral colonies and decreased florescence in *nitzschia sp.* Planktonic diatoms); Narla, Shanthi, et. al., *Sunscreen: FDA regulation, and environmental and health impact*, 19(1) Photochem. Photobiol. Sci. 66-70 (Jan. 2020) available at https://pubmed.ncbi.nlm.nih.gov/31845952/ ("***Narla Article***") (reviewing literature and noting FDA research showing percutaneous absorption of avobenzone and octocrylene in human subjects); Ouchene, Lydia, et al., *Hawaii and Other Jurisdictions Ban Oybenzone or Octionaxte Sunscreens Based on the Confirmed Adverse Environmental Effects of Sunscreen Ingredients on Aquatic Environments*, 23(6) J. Cutan. Med. Surg. 648-649, (Nov./Dec. 2019), available at https://pubmed.ncbi.nlm.nih.gov/31729915/ ("***Ouchene Article***") (reviewing scientific literature, noting: (1) accumulation and omnipresence of avobenzone; (2) toxicity of UV filters that contribute to coral bleaching due to the activation of dormant viruses in symbiotic algae that corals then expel, causing coral death; (3) significant growth reduction of *xenia* coral colonies

19. **Octocrylene**. Like all Harmful Ingredients, and common to organic chemical UV filters, octocrylene bioaccumulates and biomagnifies in aquatic species, including corals, which increases its bioavailability and, in turn, exacerbates its toxicity. Indeed, octocrylene naturally

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following exposure to sunscreen containing homosalate, oxybenzone, octocrylene, octisalate, and avobenzone after 72 hours exposure; and (4) *in vitro* studies showing UV filters adversely affect reproductive behavior in rats, egg production in fish, and brain and liver development in zebra fish); Schreurs, Richard H. M. M., et al., *Interaction of polycyclic musks and UV filters with the estrogen receptor (ER), androgen receptor (AR), and progesterone receptor (PR) in reporter gene bioassays*, 83 Toxicological Sciences 264-272 (2005), available at https://pubmed.ncbi.nlm.nih.gov/15537743/ ("***Schreurs Article 2005***") (conducting *in vivo* and *in vitro* tests to evaluate UV filters' effect on human estrogen, androgen, and progesterone receptors, finding benzophenone (octocrylene degradant) and homosalate antagonists to androgen and progesterone receptors, and avobenzone increased estrogen activity and antagonized androgen reception, consistent with published research, and evidencing each chemical's likely endocrine disruption); Slijkerman, D. M. E., et al., *Sunscreen Ecoproducts: Product Claims, Potential Effects and Environmental Risks of Applied UV Filters* (Wageningen Marine Research 2018), available at https://research.wur.nl/en/publications/sunscreen-ecoproducts-product-claims-potential-effects-and-enviro ("***Slijkerman Article***") (summarizing toxicity of organic UV filters based on literary review, noting genotoxicity (DNA damage to corals by oxybenzone, a type of benzophenone, which is a degradant of octocrylene), endocrine toxicity (estrogenic disruption by octocrylene, homosalate, and oxybenzone), decreased reproductivity (oxybenzone effect on fish), developmental toxicity (oxybenzone and octocrylene on fish embryos), phototoxicity (photo degradation resulting in lipid, protein, and DNA damage by oxybenzone and octocrylene), toxicity to corals (coral bleaching, viral infections); testing toxicity of sunscreen product A (which contain 3% avobenzone, 7.5% homosalate, 5% octisalate, 2.75% octocrylene, and 2% oxybenzone) and product B (which contains 7% homosalate, 3% octocrylene, 3% avobenzone, and 3% octisalate) on rotifers and haptophyte algal species *s. constatum* and *s. armata* , finding the sunscreen killed 50% of the tested population at levels ranging from 0.4 to 4.8 mg/L); Thorel, Evane, et al., *Effect of 10 UV Filters on the Brine Shrimp Artemia salina and the Marine Microalga Tetraselmis sp*, 8(2) Toxics. 29 (Apr. 2020), available at https://pubmed.ncbi.nlm.nih.gov/32290111/ (accessed Feb. 15, 2022) ("***Thorel Article***") (evaluating the toxicity of avobenzone (BM), octisalate (ES), octocrylene (OC), and homosalate (HS), among 6 other UV filters, on marine organisms from two major trophic levels (algae, tetraselmis sp, and brine shrimp, artemia salina), and finding: (1) the lethal dose (LC_{50}) concentrations of avobenzone, homosalate, and octocrylene is as low as 1840, 2360, and 610 micrograms of the chemical per liter of water (µg/L), respectively, resulting in the death of 50% of the tested population of brine shrimp after 72 hours of exposure; (2) octisalate and benzophenone, a degradant of octocrylene, affected the metabolic activity of the algae at such low concentrations as 100 µg/L; (3) homosalate and benzophenone, a degradant of octocrylene, were lethal to algae at concentrations as low as 100 and 1000 micograms per liter of water, respectively; and (4) further noting that homosalate and octrocrylene were the "most toxic UV filters for the tested species"); Zhong, Xin, et al., *Comparison of toxicological effects of oxybenzone, avobenzone, octocrylene, and octinoxate sunscreen ingredients on cucumbler plants (Cucumis sativus L.)*, 714 Sci. Total Environ. 136879 (Apr. 2020), available at https://pubmed.ncbi.nlm.nih.gov/32018996/ (accessed Feb. 15, 2022) ("***Zhong Article***") (finding organic UV filters, including *inter alia* avobenzone and octocrylene, decreased plant photosynthesis by inhibiting the Calvin-Benson cycle and, under long term treatment, decreased plant respiration, both of which led to the over production of reactive oxygen species and the formation of lipid peroxidation damage products that further damaged the structure and function of plant cells, causing secondary pathologies and leading to reduced crop yields, and concluding that the severe damaging effects of these filters on plant growth indicate serious damage to ecosystems that warrant the reduction of these chemicals in cosmetics and over-the-counter drugs).

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degrades, through retro-aldol condensation, into benzophenone, which is also a well-known toxin that, like octocrylene, has deleterious effects on animals and the environment. Studies show these octocrylene and its degradants have a number of toxicities to aquatic life. Notably, they reduce the photosynthetic efficiency of coral symbionts (alga and plants that provide corals with their energy and nutrients), decrease plant respiration, causes the overproduction of reactive oxygen species (which reduces resilience and causes secondary pathologies), damage the structure and function of plant cells, and inhibits plant growth. To be sure, numerous studies regarding the toxicity of UV filters to corals show that exposure to octocrylene or benzophenones, within as little as 4 hours as much as 7 days, harm and kill corals—including causing deformities, DNA damage/genotoxicity, ossification of planulae (encased within its own skeleton), induce metabolomic stress markers (e.g., inflammation), endocrine disruption, mitochondrial dysfunction, reduced growth, bleaching from the expulsion of coral mucous (zooxanthellae and coral tissues), and death in corals. To be sure, in one study no corals survived and, in others, more than half the population of tested corals died within hours or days of exposure. Numerous studies also show that octocrylene and its degradants are highly toxic to a variety of aquatic organisms and representative and other species, including corals, fish (e.g., zebrafish, fathead minnows, Japanese medaka fish), phytoplankton, planktonic crustaceans, brine shrimp, rotifers, benthic species (such as the harlequin fly), mussels, sea urchins, anemones, flat worms, ciliate, marine and bioluminescent bacterium, plants, green algae, haptophyte algae, diatoms, rats, and humans. Such toxicities are wide ranging:

- Genotoxicity (e.g., DNA damage; decreased/suppressed transcriptional activity in genes regulating stress response/immunity such as detoxification mechanisms and processes for oxidative stress, cell signaling, DNA repair, and hormone regulation in model benthic species/bottom dwellers);
- Carcinogenicity;
- Endocrine disruption (which typically includes estrogenic, and androgenic, progestogenic receptors that affect reproduction, development, and metabolic processes in nearly all species tested, including interference of hypotalmic-pituitary-thyroid axis);
- Developmental abnormalities (e.g., mal-development/formation of organs, hematopoiesis, blood vessels/circulation, increased morphological defects, increased cumulative detah rates of embryos, and inconsistent body lengths in larvae in fish; impaired larval growth, delayed emergence, reduction in weight and increased consumption in chrionomus riparius (model benthic species/bottom dwellers); pedal disks weakly or not attached to container walls, tentacles or body columns not extended, no response to touch, discoloration in anemones; impaired muscular and neuronal development; body length and weight abnormalities in fish; liver/kidney weights in rats);

- Metabolic abnormalities (e.g., fat cell differentiation and metabolism in fish; metabolic stress markers);
- Behavioral disruption (e.g., inhibited phototactic response/immobilization in planktonic crustaceans; lethargy, uncoordinated swimming, loss of equilibrium, and hyperventilation in fish);
- Reproductive toxicities (e.g., feminization of males, alteration of gonads, decreased fertility, reduced egg production in fish; alteration of weight and histology of reproductive organs and genital malformation in rats); and
- Death (e.g., corals, fish, multiple trophic levels).[20]

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[20] Blüthgen, Nancy, et al., *Accumulation and effects of the UV-Filter octocrylene in adult and embryonic zebrafish (Danio Rerio)*, 2014 Sci. Total Environ. 476-477:207-217 (Apr. 2014) available at https://pubmed.ncbi.nlm.nih.gov/24463256/ (accessed Feb. 15, 2021) ("***Bluthgen Article***") (finding octocrylene bioaccumulates in zebrafish and causes DNA damage for genes that mainly control developmental processes in the brain and liver, as well as metabolic processes in the liver, including, for example, developmental processes, organ development, hematopoiesis, formation of blood vessels, blood circulation, and fat cell differentiation and metabolism); Boyd, Aaron, et al., *A burning issue: The effect of organic ultraviolet filter exposure on the behaviour and physiology of Daphnia magna*, 750 Sci. of the Total Environ. 141707 (Jan. 2021), available at https://www.sciencedirect.com/science/article/abs/pii/S0048969720352360 (accessed Feb. 15, 2022) ("***Boyd Article***") (evaluating toxicity of UV filters, including avobenzone and octocrylene, in planktonic crustaceans (daphnia magna) at environmental concentrations, finding: (1) after 48 hours of exposure, daphnid's phototactic response (movement towards or away from light); (2) delayed mortality (death) occurred up to 7 days post-exposure to concentrations as low as 200 micrograms of avobenzone and octocrylene per liter of solution; (3) chronic exposure over 21 days to 7.5 micrograms of octocrylene per liter of solution resulted in death within 7 days, while such exposure to avobenzone caused reproductive and metabolic abnormalities; (4) exposure to avobenzone and octocrylene induced behavioral and physiological disruption at environmental concentrations); Campos, Diana, et al., *Toxicity of organic UV-filters to aquatic midge Chrionomus riparius*, 143 Ectoxicol. Environ. Safe. 210-216 (Sept. 2017), available at https://pubmed.ncbi.nlm.nih.gov/28551578/ (accessed Feb. 15, 2022) ("***Campos Article***") (evaluating effects of octocrylene, among other UV filters, on chrionomus riparius, finding it impaired larvae growth, induced development mal-effects, such as delayed emergence and reduction in adult weight, and increased energy consumption, and concluding that "environmental relevant concentrations of UV-filters can cause deleterious effects to aquatic benthic species" (bottom dwellers that include, for example, sea anemones, sponges, corals, sea stars, sea urchins, worms, bivalves, crabs, etc.)); Danovaro, Roberto, et al., *Sunscreens Cause Coral Bleaching by Promoting Viral Infections*, 116(4) Environ. Health Perspect. 441-447 (Apr. 2008), available at https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2291018/ ("***Danovaro Article 2008***") ((1) noting research findings demonstrate UV filters bioaccumulate in and have toxic effects on aquatic organisms, including their toxic by-products; (2) conducting, from 2003 to 2007, various *in situ* testing of sunscreens on coral branches from the *acropora*, *stylophora pistillata*, and *millepora complanate* species, which contained *inter alia* avobenzone (BMDBM), octisalate (EHS), octocrylene (OCT), and the octocrylene degradant, benzophenone (BZ), to find: "In all replicates and at all sampling sites, sunscreen addition even in very low quantities (i.e., 10 μL/L) resulted in the release of large amounts of coral mucous (composed of zooxanthellae and coral tissue) within 18–48 [hours of exposure], and complete bleaching of hard corals within 96 [hours of exposure] [citation omitted]. Different sunscreen brands, protective factors, and concentrations were compared, and all treatments caused bleaching of hard corals, although the rates of bleaching were faster when larger quantities were used [citation omitted]. . . . We tested sunscreen (10 μL/L) containing concentrations of UV filters higher than those reported in most natural environments. At the same time, the coral response to sunscreen exposure was not dose dependent, as the same effects were observed at low and high sun-screen concentrations. Therefore, we hypothesize that UV filters can have potentially negative impacts even at concentrations lower than those used in the present study."; and (3) concluding: "[s]unscreens cause the rapid and complete bleaching of hard corals,

even at extremely low concentrations. The effect of sunscreens is due to organic ultraviolet filters, which are able to induce the lytic viral cycle in symbiotic zooxanthellae with latent infections"; and (4) given the rate of likely exposure based on production and use statistics and correlative factors: "10% of the world's coral reefs would be threatened by sunscreen-induced coral bleaching"); Downs, C. A., et al., *Toxicopathological Effects of the Sunscreen UV Filter Oxybenzone (Benzophenone – 3), on Coral Planulae and Cultured Primary Cells and Its Environmental Contamination in Hawaii and the U.S. Virgin Islands*, 70(2) Arch. Environ. Contam. Toxicol. 265-288 (Feb. 2016), available at https://pubmed.ncbi.nlm.nih.gov/26487337/ (accessed Feb. 20, 2022) ("***Downs Article 2016***") (linking coral bleaching to sunscreen pollution—specifically benzophenone, a degradant of octocrylene—finding concentrations of 75-1400 micrograms per liter sea water in U.S. Virgin Islands (75-1400 µg/L), and 0.8-19.2 micrograms per liter sea water in Hawaii (0.8-19.2 µg/L); finding lethal concentrations of benzophenone for larval (planula) corals in the *systophora pistillata* species for: (1) 20% of the tested population after 4 and 24 hours of exposure went from 0.062 to 8 micrograms per liter to 6.5 to 10 micrograms per liter (LC_{20} 0.062-8 µg/L (4 hours), LC_{20} 6.5-10µg/L (24 hours)); and (2) 50% of the tested population after 4, 8 and 24 hours of exposure went from 8 to 340 micrograms, to 3.1 to 16.8 milligrams, to 139 to 779 micrograms per liter (LC_{50} 8-340 µg/L (4 hours), LC_{50} 3.1-16.8 mg/L (8 hours), LC_{50} 139-779 µg/L (24 hours)); finding adverse effects of benzophenone on systophora pistillata include: deformity, bleaching, DNA damage, disruption of the endocrine system, causing the planula to become encased in its own skeleton; and concluding the Hawaiian and U.S. Virgin Island environmental concentrations of benzophenone exceed lethal levels and pose a hazard to coral reefs); Downs, Craig A., et. al., *Benzophenone Accumulates over Time from the Degradation of Octocrylene in Commercial Sunscreen Products*, ACS (2021), available at https://pubs.acs.org/doi/10.1021/acs.chemrestox.0c00461 (accessed Feb. 16, 2022) ("***Downs Article 2021***") (testing numerous commercial sunscreens, including two single ingredient sources of octocrylene, under the FDA accelerated stability aging protocol for 6 weeks to find that octocrylene naturally degrades into benzophenone through retro-aldol condensation and noting the United States ban on benzophenone in food products and packaging because it is a mutagen, carcinogen, and endocrine disruptor, as well as California's Proposition 65 no-safe-harbor ban on benzophenone in any personal care products, which includes sunscreens); Gago-Ferrero, Pablo, et al., *An overview of UV-absorbing compounds (organic UV filters) in aquatic biota*, 404(9) Anal. Bioanal. Chem. 2597-2610 (Nov. 2012), available at https://pubmed.ncbi.nlm.nih.gov/22669305/ (Feb. 20, 2022) ("***Gago-Ferrero Article 2012***") (reviewing scientific literature regarding organic UV filters: (1) discussing the filters' physiochemical properties, noting high lipophilicity and poor biodegradability of UV filters, causing them to accumulate in effluent from wastewater treatment, sediments, and biota, and explaining that organic UV filters are expected to be stored faster than they are metabolized or excreted due to their low water solubility (lipophilic character), and finding mussels and fish store homosalate; (2) noting likely biomagnifcation of UV filters in predator-prey pairs; (3) noting ubiquitous contamination of organic UV filters in oceans, likely due to sunscreens and personal care products, and their common toxic impact on the endocrine system; (4) reviewing scientific toxicity studies and noting, for example, (a) benzophenone (degradant of octocrylene) is toxic to mussels, sea urchins, marine bacterium, planktonic crustaceans, ciliate (reduced multixenobiotic resistance), bioluminescent bacterium (estrogenic activity), zebrafish (estrogenic activity, bioaccumulation, alteration of genetic expression, antiandrogenic activity), green algae (affected cell growth, pigment production, photosynthetic process, general toxicity, affected metabolic activity)), fathead minnows (feminization of males, alteration of gonads, decreased fertility and reproduction), Japanese medaka fish (hormonal changes, significantly reduced egg production), clownfish (death, disrupted swimming behavior), coral bleaching and reduced coral growth, (b) octocrylene toxic to ciliate, green algae, brine shrimp, flatworms (reduced growth rate), anemones (pedal disks weakly or not attached to container walls, tentacles or body columns not extended, no response to touch, discoloration), diatoms (decreased fluorescence), coral bleaching and reduced coral growth; (5) linking coral bleaching to sunscreen pollution and the toxic impact of UV filters, among other factors, noting toxicity studies of corals that show: (a) exposure to avobenzone, benzophenone, octocrylene, octisalate, among others, resulted in large discharge of

coral mucus (zooxanthellae and coral tissue) within 18-48 hours and complete bleaching, (b) exposure of planulae to benzophenone causing deformity, genotoxicity, ossification, and endocrine disruption, (c) benzophenone bioaccumulating in corals and causing coral bleaching, (d) exposure to homosalate, octocrylene, benzophenone, octisalate, and avobenzone reduced coral growth); He, Tangtian, et al., *Comparative toxicities of four benzophenone ultraviolet filters to two life stages of two coral species*, 651(2) Sci. Total Environ. 2391-2399 (Feb. 2019), available at https://pubmed.ncbi.nlm.nih.gov/30336428/ ("***He Article I 2019***") (testing mortality of coral species pocillopora damicornis and seriatopora caliendrum after exposure to benzophenones (octocrylene degradant) ranging from 0.1 to 1000 µg/L, finding bleaching and mortality at 10 µg/L, bioaccumulation correlated with adverse effects, and performing risk assessment based on environmental concentrations that show corals at medium to high risk); He, Tangtian, et al., *Toxicological effects of two organic ultraviolet filters and a related commercial sunscreen product in adult corals*, 245 Environ. Pollut. 462-471 (Feb. 2019), available at https://pubmed.ncbi.nlm.nih.gov/30458376/ ("***He Article II 2019***") (*in vivo* testing of mortality after 7-day exposure to sunscreen-water solution (which contained 33.50 µg/L octocrylene) on coral species *seriatopora caliendrum* and *pocillopora damicornis*, resulted in high mortality in *s. caliendrum* (66.7-83.3%) and *p. damicornis* (33.3-50%), concluding octocrylene bioaccumulates in corals, which increases its bioavailability to corals and exacerbates the toxicity of sunscreen products); Krause, M., et al., *Sunscreens: are they beneficial for health? An overview of endocrine disrupting properties of UV-filters*, 35(3) Int'l J. Andrology 424-436 (2012), available at https://pubmed.ncbi.nlm.nih.gov/22612478/ ("***Krause Article***") (summarizing the main results of *in vitro* and *in vivo* studies on various organic UV filters' adverse effects to the endocrine system for, *inter alia*, homosalate and benzophenone (octocrylene degradant), which have been found to affect different biomarkers demonstrating increased and decreased estrogenic, androgenic, progestogenic activities (endocrine disruption); and noting further that developmental studies showed benzophenone alters the weight and histology of reproductive organs, and alters proteins and genetic expression in the uterus and prostate of rats, fertility studies of rats exposed to benzophenone for 90 days showed decreased sperm density and for mice increased abnormal spermatozoa, *in vitro* and *in vivo* studies on rats showed benzophenone interferes with the hypothalamic-pituitary-thyroid axis, in mammalian long-term models examining general toxicity of benzophenone showed it affected liver and kidney weights, experimental studies showed benzophenone in human plasma, urine, breast milk, and placentas correlated with genital malformations and decreased birth weight and head circumference; and concluding "a large number of in vivo animal studies and in vitro studies have shown that there are numerous potential adverse effects of UV-filters present in sunscreens and cosmetics. The effects include developmental and reproductive effects, apparently caused by endocrine disrupting actions of these chemicals."); Kunz, Petra Y., et al., *Multiple hormonal activities of UV filters and comparison of in vivo and in vitro estrogenic activity of ethyl-4-aminobenzoate in fish*, 79(4) Aquatic Toxicology 305-324 (Oct. 2006), available at https://pubmed.ncbi.nlm.nih.gov/16911836/ ("***Kunz Article I 2006***") (conducting in vitro testing with human cells and in vivo testing with fathead minnows, by exposing them to UV filters at non-lethal levels, and measuring estrogenic and androgenic hormone activities, and finding benzophenone, a degradant of octocrylene, as well as a majority of the UV filters tested, disrupted the endocrine system); Kunz, Petra, et al., *Comparison of In Vitro and In Vivo Estrogenic Activity of UV Filters in Fish*, 90(2) Toxicological Sciences 349-361 (2006), available at https://academic.oup.com/toxsci/article/90/2/349/1658390 ("***Kunz Article II 2006***") (conducting *in vitro* tests to evaluate estrogenic activity in human and rainbow trout cells after exposure to organic UV filters and finding octisalate (OS) and benzophenones (octocrylene degradants) caused estrogenic activity (endocrine disruption); and conducting *in vivo* tests to evaluate toxicity to fathead minnows after 14 days of exposure to benzophenones, finding: toxic side effects after exposure to 5000µg/L for 8 days (lethargy, uncoordinated swimming, loss of equilibrium, and hyperventilation), death occurred in 10-20% of the tested population, between 8 and 12 days of exposure, at concentrations ranging from 753 to 8783 µg/L, decreases in body weight gain and body length after 14 days, at 4919 µg/L, and estrogenic activity at higher concentrations of 4919 to 8783 µg/L); Ma, Risheng, et al., *UV Filters with Antagonistic Action at Androgen Receptor in the MDA-kb2 Cell*

Transcriptional-Activation Assay, 74(1) Toxicological Sciences, 43-50 (2003), available at https://academic.oup.com/toxsci/article/74/1/43/1664165 ("***Ma Article***") (*in vitro* testing of organic UV filters' impact on human estrogen and androgen receptors, finding homosalate (HMS) and benzophenones (octocrylene degradant) showed significant androgen antagonism and exhibited estrogenic activity, after exposure in the low micromolar range, supporting the conclusion that the chemicals disrupt the endocrine system); McCoshum, Shaun, et al., *Direct and indirect effects of sunscreen exposure for reef biota*, 776 Hydrobiologia 139-146 (2016), available at https://link.springer.com/article/10.1007/s10750-016-2746-2 ("***McCoshum Article***") (evaluating sunscreen concentration of 0.26 mL/L, containing homosalate, octocrylene, octisalate, and avobenzone, impact on flatworms *convolutriloba macropyga* with symbiotic algae, photosynthetic diatoms *nitzschia sp.*, *aiptasia* anemones, and pulse corals *xenia sp.*, after 72 hours of exposure, finding negative impact on estimations of population and significant growth reduction of exposed coral colonies and decreased florescence in *nitzschia sp.* Planktonic diatoms); Muniz-Gonzalez, Ana-Belen, et al., *Unveiling complex responses at the molecular level: Transcriptional alterations by mixtures of bisphenol A, octocrylene, and 2'-ethylhexyl 4-(dimethylamino) benzoate on Chrinomus riparius*, 206 Ectoxicology and Environmental Safety 111199 (Sept. 2020), available at https://www.sciencedirect.com/science/article/pii/S0147651320310381?via%3Dihub (accessed Feb. 15, 2022) ("***Muniz-Gonzalez Article***") (evaluating molecular mechanisms in cellular response to octocrylene and other compounds using chrionomus riparius larvae, an organism used to study transcription in invertebrates, by exposing the larvae to concentrations as low as 0.1 and 1.0 mg/liter over 24 and 96 hours, of octocrylene in isolation and in conjunction with 1 or 2 other chemicals, to evaluate its impact on 40 genes, and finding exposure: (1) decreased levels of transcriptional activity in genes associated with detoxification mechanisms; (2) repressed transcription in genes associated with the stress response and immunity, which typically regulate cellular processes such as oxidative stress, biomolecule synthesis, and cell signaling, and DNA repair, which suggests long term effects on development; and (3) disturbed metabolic processes to a degree sufficient for hormonal regulation, detoxification mechanisms, and the stress response to be affected); Narla, Shanthi, et. al., *Sunscreen: FDA regulation, and environmental and health impact*, 19(1) Photochem. Photobiol. Sci. 66-70 (Jan. 2020) available at https://pubmed.ncbi.nlm.nih.gov/31845952/ ("***Narla Article***") (reviewing literature and noting: (1) several legislative bans in Hawaii, Florida, U.S. Virgin Islands, Paulau, and Mexico on UV filters, including benzophenone and octocrylene, and similar discussions in Brazil and the European Union, due to concerns of coral bleaching; (2) FDA research showing percutaneous absorption of avobenzone and octocrylene in human subjects; and (3) toxicity of oxybenzone, a type of benzophenone (which is an octocrylene degradant), including adverse endocrinological (hormonal) effects of in fish and rats, coral bleaching (inducing ossification and deformation of DNA in the larval stage), and lethal exposure after 4 hours to corals *in vitro* at concentrations as low as 8 to 340 $\mu g/L^{-1}$); Ouchene, Lydia, et al., *Hawaii and Other Jurisdictions Ban Oybenzone or Octionaxte Sunscreens Based on the Confirmed Adverse Environmental Effects of Sunscreen Ingredients on Aquatic Environments*, 23(6) J. Cutan. Med. Surg. 648-649, (Nov./Dec. 2019), available at https://pubmed.ncbi.nlm.nih.gov/31729915/ ("***Ouchene Article***") (reviewing scientific literature, noting: (1) approximately 14,000 tons of sunscreens are estimated to affect coral reef habitats; (2) growing environmental concerns with the use of organic UV filters, including homosalate, octisalate, avobenzone, and octocrylene, which have been detected in water sources and supplies around the world; (3) frequent detection of octisalate, homosalate, and octocrylene in corals in Hawaii, revealing their omnipresence; (4) numerous studies detecting organic UV filters in marine organisms, including white fish, roach, perch, cod, rainbow trout, barb, chub, and mussels; (5) inefficacy of common wastewater treatments to remove organic UV filters; (6) accumulation of UV filters in marine organisms; (7) toxicity of UV filters that contribute to coral bleaching due to the activation of dormant viruses in symbiotic algae that corals then expel, causing coral death; (8) significant growth reduction of *xenia* coral colonies following exposure to sunscreen containing homosalate, oxybenzone, octocrylene, octisalate, and avobenzone after 72 hours exposure; (9) *in vitro* studies showing UV filters adversely affect reproductive behavior in rats, egg production in fish, and brain and liver development in zebra fish; and (10) Pualau ban on sunscreens that contain octocrylene, *inter alia*); Ozaez, Irene, et al., *Ultraviolet Filters differentially impact the expression*

of key endocrine and stress genes in embryos and larvae of Chironomus riparius, 557-558 Sci. Total. Environ. 240-247 (July 2016), available at https://pubmed.ncbi.nlm.nih.gov/26994811/ (accessed Feb. 15, 2022) ("***Ozaez Article***") (studying toxicity of various organic UV filters, including octocrylene and benzophenone, a degradant of octocrylene, on embryos and larvae in the chrionomus riparius species (a frequently used reference organism for ecotoxicology research indicative of similar aquatic bottom-dwellers (such as sea anemones, sponges, corals, sea stars, sea urchins, worms, bivalves, crabs, etc.) by exposing larvae and embryos to varying concentrations of the UV filters to determine their lethal dose (the concentration that causes mortality in 50% of the exposed population (LC_{50})) and assess effects at sublethal levels on biomarkers for endocrine and stress at the cellular level, and finding: (1) within 24 hours of exposure at sub-lethal levels, embryos demonstrated endocrine disruption and stress effects; (2) most UV filters triggered the cellular stress response, exhibiting proteotoxic effects (cellular damage that can lead to death and dysfunction); and (3) embryos exhibited greater sensitivity than larvae, which has a significant impact on endocrine regulation during development); Park, Chang-Beom, et al., *Single- and Mixture Toxicity of Three Organic UV-Filters, Ethylhexyl Methoxycinnamate, Octocrylene, and Avobenzone on Daphnia Magna*, 137 Ecotoxicology and Environmental Safety 57-63 (Mar. 2017), available at https://www.researchgate.net/publication/311425878_Single-_and_mixture_toxicity_of_three_organic_UV-filters_ethylhexyl_methoxycinnamate_octocrylene_and_avobenzone_on_Daphnia_magna ("***Park Article***") (testing toxicity of organic UV filters, including octocrylene and avobenzone, on daphnia magna, a planktonic crustacean, finding low concentrations of 1 μg/ml immobilized 25% of the tested population, concentrations of 3.18 and 1.95 μg/ml, respectively, immobilized 50%, and 40 μg/ml immobilized 90%; after 48 hours exposure, immobilized daphnia had UV filters sticking to its body at 10 μg/ml octocrylene; and avobenzone bioaccumulated in daphnia at 20 μg/ml); Ruszkiewicz, Joanna, et al., *Neurotoxic effect of active ingredients in sunscreen products, a contemporary review*, 4 Toxicol. Rep. 245-259 (May 2017), available at https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5615097/#bib0635 ("***Ruszkiewicz Article***") (reviewing scientific literature regarding presence and toxicity of organic and inorganic UV filters commonly found in sunscreens and finding: (1) the average 40g single dose of sunscreen (or 4g/dose of active ingredients at 10% concentration); (2) the detection of UV filters in natural water bodies, tap and groundwater, and wastewater treatment plants, and their increasing, persistent input, and accumulation in the environment, including the ubiquitous presence of UV filters in aquatic systems and aquatic biota; (3) the detection of UV filters at nanogram levels per gram of fish, mussels, crustaceans, mammals, and aquatic birds and evidence that they bioaccumulate and biomagnify within food webs; (4) due to the UV filters' increased usage, lack of efficient removal, and increasing environmental contamination, levels may reach concentrations lethal or toxic to aquatic life through chronic low-dose exposure, noting as an example benzophenone contamination (a degradant of octocrylene) of corals off the shores of the U.S. Virgin Islands and Hawaii at lethal levels; (5) "The endocrine disruptive and developmental toxicity of many organic UV filters in experimental models is well established, these filters seem to be associated with altered estrogen, androgen and progesterone activity, reproductive and developmental toxicity and impaired functioning of the thyroid, liver or kidneys, reviewed elsewhere" (citing several articles); and (6) summarizing findings of several studies regarding the toxicity of, for example, benzophenone, a degradant of octocrylene (endocrine disruption, decreased cell viability, reproductive harm and mutations, impaired and muscular and neuronal development), octocrylene (DNA damage related to development and metabolism in the brain)); Schneider, Samantha L., et al., *Review of environmental effects of oxybenzone and other sunscreen active ingredients*, 80(1) J. Am. Acad. Dermatology 266 (2019), available at https://pubmed.ncbi.nlm.nih.gov/29981751/ ("***Schneider Article***") (noting UV filters, such as octocrylene and octisalate, have been found "in almost all water sources around the world," and "are not easily removed by common wastewater treatment plant techniques; oxybenzone, a type of benzophenone, which is a degradant of octocrylene, has been linked to coral reef bleaching; and the presence of octocrylene and its degradants in various fish species worldwide has indicated these UV filters biomagnify and bioaccumulate in food webs); Schreurs, Richard, et al., *Estrogenic Activity of UV Filters Determined by an In Vitro Reporter Gene*

Assay and an In Vivo Transgenic Zebrafish Assay, 76 Archives of Toxicology 257-261 (June 2002), available at https://www.researchgate.net/publication/11270146_Estrogenic_activity_of_UV-filters_determined_by_an_in_vitro_reporter_gene_assay_and_an_in_vivo_transgenic_Zebrafish_assay ("***Schreurs Article 2002***") (noting UV filter chemical pollutants bind to estrogen receptors that then disrupts the endocrine function, and their tendency to bioaccumulate in the environment, and conducting in vitro testing on zebrafish by exposing cells for 24 hours to, for example, benzophenone (a degradant of octocrylene) and homosalate, which induced estrogenic activity in vitro at significant levels as low as 1μM, which induced estrogenic activity indicative of endocrine disruption); Schreurs, Richard H. M. M., et al., *Interaction of polycyclic musks and UV filters with the estrogen receptor (ER), androgen receptor (AR), and progesterone receptor (PR) in reporter gene bioassays*, 83 Toxicological Sciences 264-272 (2005), available at https://pubmed.ncbi.nlm.nih.gov/15537743/ ("***Schreurs Article 2005***") (conducting *in vivo* and *in vitro* tests to evaluate UV filters' effect on human estrogen, androgen, and progesterone receptors, finding benzophenone (octocrylene degradant) and homosalate antagonists to androgen and progesterone receptors, and avobenzone increased estrogen activity and antagonized androgen reception, consistent with published research, and evidencing each chemical's likely endocrine disruption); Sieratowicz, Agnes, et al., *Acute and chronic toxicity of four frequently used UV filter substances for Desmodesmus subpicatus and Daphnia magna*, 46(A) J. Environ. Health Sci. 1311-1319 (2011), available at https://pubmed.ncbi.nlm.nih.gov/21929467/ (accessed Feb. 15, 2022) ("***Sieratowicz Article***") (examining four frequently used UV filters, such as benzophenone, a degradant of octocrylene, on primary aquatic producers and consumers (the green alga desmodesmus subspicatus and the crustacean daphnia magna) and finding exposure within 72 hours at concentrations as low as 0.56 mg benzophenone per liter of water inhibited the algae's growth, and finding lethal concentrations as low as 1.67 mg/L benzophenone to water, in which half the tested population of crustaceans died after 72 hours of exposure); Slijkerman, D. M. E., et al., *Sunscreen Ecoproducts: Product Claims, Potential Effects and Environmental Risks of Applied UV Filters* (Wageningen Marine Research 2018), available at https://research.wur.nl/en/publications/sunscreen-ecoproducts-product-claims-potential-effects-and-enviro ("***Slijkerman Article***") (summarizing toxicity of organic UV filters based on literary review, noting genotoxicity (DNA damage to corals by oxybenzone, a type of benzophenone, which is a degradant of octocrylene), endocrine toxicity (estrogenic disruption by octocrylene, homosalate, and oxybenzone), decreased reproductivity (oxybenzone effect on fish), developmental toxicity (oxybenzone and octocrylene on fish embryos), phototoxicity (photo degradation resulting in lipid, protein, and DNA damage by oxybenzone and octocrylene), toxicity to corals (coral bleaching, viral infections); testing toxicity of sunscreen product A (which contain 3% avobenzone, 7.5% homosalate, 5% octisalate, 2.75% octocrylene, and 2% oxybenzone) and product B (which contains 7% homosalate, 3% octocrylene, 3% avobenzone, and 3% octisalate) on rotifers and haptophyte algal species *s. constatum* and *s. armata* , finding the sunscreen killed 50% of the tested population at levels ranging from 0.4 to 4.8 mg/L); Stien, Didier, et al., *Metabolomics Reveal That Octocrylene Accumulates in Pocillopora Damicornis Tissues as Fatty Acid Conjugates and Triggers Coral Cell Mitochondrial Dysfunction*, 91(1) Analytical Chemistry 990-995 (Jan. 2019), available at https://pubmed.ncbi.nlm.nih.gov/30516955/ (accessed Feb. 15, 2022) ("***Stien Article 2019***") (evaluating corals, adult *pocillopora damicornis*, exposed to concentrations of octocrylene as low as 5, 50, 300, and 1000 micrograms per liter of water, and finding: (1) octocrylene including its analogues accumulate in the corals' tissues; and (2) octocrylene is toxic to corals because it causes mitochondrial dysfunction); Stien, Didier, et al., *A unique approach to monitor stress in coral exposed to emerging pollutants*, 10(1) Sci. Rep. 9601 (June 2020), available at https://pubmed.ncbi.nlm.nih.gov/32541793/ (accessed Feb. 15, 2022) ("***Stien Article 2020***") (finding corals, *pocillopora damicornis*, exposed to low concentrations of 50 micrograms of octocrylene or octisalate per liter of water showed metabolomic stress markers, including mitochondrial dysfunction and inflammation); Thorel, Evane, et al., *Effect of 10 UV Filters on the Brine Shrimp Artemia salina and the Marine Microalga Tetraselmis sp*, 8(2) Toxics. 29 (Apr. 2020), available at https://pubmed.ncbi.nlm.nih.gov/32290111/ (accessed Feb. 15, 2022) ("***Thorel Article***") (evaluating the toxicity of avobenzone (BM), octisalate (ES), octocrylene (OC), and

homosalate (HS), among 6 other UV filters, on marine organisms from two major trophic levels (algae, tetraselmis sp, and brine shrimp, artemia salina), and finding: (1) the lethal dose (LC_{50}) concentrations of avobenzone, homosalate, and octocrylene is as low as 1840, 2360, and 610 micrograms of the chemical per liter of water (µg/L), respectively, resulting in the death of 50% of the tested population of brine shrimp after 72 hours of exposure; (2) octisalate and benzophenone, a degradant of octocrylene, affected the metabolic activity of the algae at such low concentrations as 100 µg/L; (3) homosalate and benzophenone, a degradant of octocrylene, were lethal to algae at concentrations as low as 100 and 1000 micograms per liter of water, respectively; and (4) homosalate and octrocrylene were the "most toxic UV filters for the tested species"); Tibbetts, John, *Bleached, But Not by the Sun: Sunscreen Linked to Coral Damage*, 116 Environ. Health Perspect. A173 (Apr. 2008), available at https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2291012/ ("***Tibbetts Article***") (noting, "Coral reefs are among the most biologically productive and diverse ecosystems in the world, providing food protein for half a billion people. But tropical reefs have begun dying from bleaching, with the frequency and spatial extent of such bleaching increasing dramatically over the past 20 years."; describing findings of researchers that tested several brand sunscreens *in situ* that showed, after 4 days of exposure to quantities as small as 10 microliters of sunscreen per liter of sea water, within only the first few hours, corals tested all over the world began to bleach as a result of the sunscreen's chemical ingredients, such as benzophenone (a degradant of octocrylene), stimulating dormant viral infections in zooanthellae (algae covering corals), which then caused viral hosts to explode, spilling viruses into surrounding water and spreading the infection to nearby coral communities; and concluding: "chemical compounds in sunscreen products can cause abrupt and complete bleaching of hard corals, even at extremely low concentrations."); Tovar-Sanchez, Antonio, et al., *Sunscreen Products as Emerging Pollutants to Coastal Waters*, 8(6) PLoS One e65451 (June 2013), available at https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3673939/#pone.0065451.s004 (accessed Feb. 15, 2022) ("***Tovar-Sanchez Article***") (evaluating acute toxicity of organic UV filters, such as benzophenone, a degradant of octocrylene, to phytoplankton chaetoceros gracilis, and finding the lethal concentration (EC_{50}), at which several tested sunscreen products containing organic UV filters killed half the tested population after 72 hours of exposure, averaged $125±71^{-1}$ mg sunscreen per liter of sea water and ranged between 45-218 mg/L^{-1}, noting that, for example, water insolubility compounds common to sunscreens inhibit degradation and contribute to the contaminants' persistence); Tsui, Mirabelle M. P., et al., *Occurrence, Distribution, and Fate of Organic UV Vilters in Coral Communities*, 51(8) Environ. Sci. Technol. 4182-4190 (Apr. 2017), available at https://pubmed.ncbi.nlm.nih.gov/28351139/ (accessed Feb. 15, 2022) ("***Tsui Article***") (studying the concentration of common organic UV filters, including octocrylene and benzophenone, a degradant of octocrylene, and finding these chemicals in coral tissues, as often as 65% of the sampled reefs or more, at concentrations in excess of threshold values for causing larval deformities and mortality); Wijgerde, Tim, et al., *Adding insult to injury: Effects of chronic oxybenzone exposure and elevated temperature on two reef-building corals*, 733 Sci. Total Environ. 139030 (Sept. 2020), available at https://pubmed.ncbi.nlm.nih.gov/32446051/ ("***Wijgerde Article***") (finding corals *stylophora pistillata* and *acropora tenuis* 2-week exposure to organic UV filter oxybenzone, a type of benzophenone (which is a degradant of octocrylene), at a concentration as low as 0.06 µg/L^{-1}, significantly decreased zooxanthellae photosynthetic yield by 5% for both coral species and, when combined with a heat wave, killed <u>all</u> exposed *acropora tenuis* corals (0% survival rate)); Yan, Salihong, et al., *Reproductive toxicity and estrogen activity in Japanese medaka (Oryzias latipes) exposed to environmentally relevant concentrations of octocrylene*, 261 Environ. Pllut. 114104 (June 2020), available at https://pubmed.ncbi.nlm.nih.gov/32045793/ (accessed Feb. 15, 2022) ("***Yan Article***") (examining toxicity of octocrylene to Japanese rice fish, a model organism extensively used in toxicology research, at biochemical and molecular levels by exposing these aquatic organisms to nominal concentrations of 5, 50, and 500 micrograms of octocrylene per liter of solution for 28 days and finding continued exposure increased the time to hatching, morphological abnormality rates, cumulative death rates of embryos, and inconsistent body lengths in larvae, indicating octocrylene causes reproductive toxicity and endocrine disruption); Zhong, Xin, et al., *Comparison of toxicological effects of oxybenzone, avobenzone, octocrylene, and*

20. **Homosalate.** Like all Harmful Ingredients, and common to organic chemical UV filters, homosalate bioaccumulates and biomagnifies in aquatic species, including corals, which increases its bioavailability and, in turn, exacerbates its toxicity. Studies show homosalate has a number of toxicities to aquatic life. Notably, a few studies regarding the toxicity of UV filters to corals show that exposure to homosalate, within 72 hours, reduces coral growth and/or causes death. Similar to the other Harmful Ingredients, studies also show that homosalate is highly toxic to a variety of aquatic organisms and representative or other species, including corals, fish, planktonic crustaceans, brine shrimp, rotifers, anemones, flat worms, ciliate, plants, haptophyte algae, diatoms, rats, and humans. Just like other organic UV filters, including the Harmful Ingredients, toxicities include endocrine disruption (e.g., anti-androgenic activity); developmental abnormalities (reduced growth in fish, benthic species, and corals; pedal disks weakly or not attached to container walls, tentacles or body columns not extended, no response to touch, discoloration in anemones); and death.[21]

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octinoxate sunscreen ingredients on cucumbler plants (Cucumis sativus L.), 714 Sci. Total Environ. 136879 (Apr. 2020), available at https://pubmed.ncbi.nlm.nih.gov/32018996/ (accessed Feb. 15, 2022) ("***Zhong Article***") (finding organic UV filters, including *inter alia* avobenzone and octocrylene, decreased plant photosynthesis by inhibiting the Calvin-Benson cycle and, under long term treatment, decreased plant respiration, both of which led to the over production of reactive oxygen species and the formation of lipid peroxidation damage products that further damaged the structure and function of plant cells, causing secondary pathologies and leading to reduced crop yields, and concluding that the severe damaging effects of these filters on plant growth indicate serious damage to ecosystems that warrant the reduction of these chemicals in cosmetics and over-the-counter drugs).

[21] Gago-Ferrero, Pablo, et al., *An overview of UV-absorbing compounds (organic UV filters) in aquatic biota*, 404(9) Anal. Bioanal. Chem. 2597-2610 (Nov. 2012), available at https://pubmed.ncbi.nlm.nih.gov/22669305/ (Feb. 20, 2022) ("***Gago-Ferrero Article 2012***") (reviewing scientific literature regarding organic UV filters: (1) discussing the filters' physiochemical properties, noting high lipophilicity and poor biodegradability of UV filters, causing them to accumulate in effluent from wastewater treatment, sediments, and biota, and explaining that organic UV filters are expected to be stored faster than they are metabolized or excreted due to their low water solubility (lipophilic character), and finding mussels and fish store homosalate; (2) noting likely biomagnifcation of UV filters in predator-prey pairs; (3) reviewing scientific toxicity studies and noting, for example, homosalate found toxic to ciliate, brine shrimp, flatworms (reduced growth rate), anemones (pedal disks weakly or not attached to container walls, tentacles or body columns not extended, no response to touch, discoloration), diatoms (decreased fluorescence), and reduced coral growth; (4) linking coral bleaching to sunscreen pollution and the toxic impact of UV filters, among other factors, noting toxicity studies of corals that show exposure to homosalate, octocrylene, benzophenone, octisalate, and avobenzone reduced coral growth); Jiménez-Díaz, I., et al., *Simultaneous determination of the UV-filters benzyl salicylate, phenyl salicylate, octyl salicylate, homosalate, 3-(4-methylbenzylidene) camphor and 3-benzylidene*

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camphor in human placental tissue by LC-MS/MS. Assessment of their in vitro endocrine activity, 936 Journal of Chromatography Biomed Life Sci. 80-87 (Oct. 2013), available at https://pubmed.ncbi.nlm.nih.gov/24004914/ (accessed Feb. 20, 2022) ("***Jimenez-Diaz Article***") (*in vitro* testing of organic UV filters' impact on human estrogen and androgen receptors, finding octisalate exposure caused increased estrogenic activity and homosolate exposure caused anti-androgenic activity, consistent with studies finding these chemicals are endocrine disruptors); Kim, Tae Hwan, et al.., *Percutaneous Absorption, Disposition, and Exposure Assessment of Homosalate, a UV Filtering Agent, in Rats*, 77(4) J. of Toxicology and Environmental Health, Part A., 202-213 (2014), available at https://pubmed.ncbi.nlm.nih.gov/24555679/ (accessed Feb. 20, 2022) ("***Kim Article***") (conducting *in vitro* and *in vivo* studies on homosalate's percutaneous absorption and disposition in rats, finding some systemic absorption, a relatively long half-life, and mean bioavailability ranging between 4.2 and 5.4% for low and high doses (10 to 20 mg), noting studies show homosalate impacts the endocrine system through increased estrogenic activity and antiandrogenic activity); Krause, M., et al., *Sunscreens: are they beneficial for health? An overview of endocrine disrupting properties of UV-filters*, 35(3) Int'l J. Andrology 424-436 (2012), available at https://pubmed.ncbi.nlm.nih.gov/22612478/ (accessed Feb. 20, 2022) ("***Krause Article***") (summarizing the main results of *in vitro* and *in vivo* studies on various organic UV filters' adverse effects to the endocrine system for, *inter alia*, homosalate and benzophenone (octocrylene degradant), which have been found to affect different biomarkers demonstrating increased and decreased estrogenic, androgenic, progestogenic activities (endocrine disruption); and concluding "a large number of in vivo animal studies and in vitro studies have shown that there are numerous potential adverse effects of UV-filters present in sunscreens and cosmetics. The effects include developmental and reproductive effects, apparently caused by endocrine disrupting actions of these chemicals."); Ma, Risheng, et al., *UV Filters with Antagonistic Action at Androgen Receptor in the MDA-kb2 Cell Transcriptional-Activation Assay*, 74(1) Toxicological Sciences, 43-50 (2003), available at https://academic.oup.com/toxsci/article/74/1/43/1664165 (accessed Feb. 20, 2022) ("***Ma Article***") (*in vitro* testing of organic UV filters' impact on human estrogen and androgen receptors, finding homosalate (HMS) and benzophenones (octocrylene degradant) showed significant androgen antagonism and exhibited estrogenic activity, after exposure in the low micromolar range, supporting the conclusion that the chemicals disrupt the endocrine system); McCoshum, Shaun, et al., *Direct and indirect effects of sunscreen exposure for reef biota*, 776 Hydrobiologia 139-146 (2016), available at https://link.springer.com/article/10.1007/s10750-016-2746-2 ("***McCoshum Article***") (evaluating sunscreen concentration of 0.26 mL/L, containing homosalate, octocrylene, octisalate, and avobenzone, impact on flatworms *convolutriloba macropyga* with symbiotic algae, photosynthetic diatoms *nitzschia sp.*, *aiptasia* anemones, and pulse corals *xenia sp.*, after 72 hours of exposure, finding negative impact on estimations of population and significant growth reduction of exposed coral colonies and decreased florescence in *nitzschia sp.* Planktonic diatoms); Ouchene, Lydia, et al., *Hawaii and Other Jurisdictions Ban Oybenzone or Octionaxte Sunscreens Based on the Confirmed Adverse Environmental Effects of Sunscreen Ingredients on Aquatic Environments*, 23(6) J. Cutan. Med. Surg. 648-649, (Nov./Dec. 2019), available at https://pubmed.ncbi.nlm.nih.gov/31729915/ ("***Ouchene Article***") (reviewing scientific literature, noting: (1) approximately 14,000 tons of sunscreens are estimated to affect coral reef habitats; (2) growing environmental concerns with the use of organic UV filters, including homosalate, octisalate, avobenzone, and octocrylene, which have been detected in water sources and supplies around the world; (3) frequent detection of octisalate, homosalate, and octocrylene in corals in Hawaii, revealing their omnipresence; (4) numerous studies detecting organic UV filters in marine organisms, including white fish, roach, perch, cod, rainbow trout, barb, chub, and mussels; (5) inefficacy of common wastewater treatments to remove organic UV filters; (6) accumulation of UV filters in marine organisms; (7) toxicity of UV filters that contribute to coral bleaching due to the activation of dormant viruses in symbiotic algae that corals then expel, causing coral death; (8) significant growth reduction of *xenia* coral colonies following exposure to sunscreen containing homosalate, oxybenzone, octocrylene, octisalate, and avobenzone after 72 hours exposure; (9) *in vitro* studies showing UV filters adversely affect reproductive behavior in rats, egg production in fish, and brain and liver development in zebra fish; and (10) Pualau ban on sunscreens that contain

octocrylene, *inter alia*); Schreurs, Richard, et al., *Estrogenic Activity of UV Filters Determined by an In Vitro Reporter Gene Assay and an In Vivo Transgenic Zebrafish Assay*, 76 Archives of Toxicology 257-261 (June 2002), available at https://www.researchgate.net/publication/11270146_Estrogenic_activity_of_UV-filters_determined_by_an_in_vitro_reporter_gene_assay_and_an_in_vivo_transgenic_Zebrafish_assay (accessed Feb. 20, 2022) ("***Schreurs Article 2002***") (noting UV filter chemical pollutants bind to estrogen receptors that then disrupts the endocrine function, and their tendency to bioaccumulate in the environment, and conducting in vitro testing on zebrafish by exposing cells for 24 hours to, for example, benzophenone (a degradant of octocrylene) and homosalate, which induced estrogenic activity in vitro at significant levels as low as 1μM, which induced estrogenic activity indicative of endocrine disruption); Schreurs, Richard H. M. M., et al., *Interaction of polycyclic musks and UV filters with the estrogen receptor (ER), androgen receptor (AR), and progesterone receptor (PR) in reporter gene bioassays*, 83 Toxicological Sciences 264-272 (2005), available at https://pubmed.ncbi.nlm.nih.gov/15537743/ (accessed Feb. 20, 2022) ("***Schreurs Article 2005***") (conducting *in vivo* and *in vitro* tests to evaluate UV filters' effect on human estrogen, androgen, and progesterone receptors, finding benzophenone (octocrylene degradant) and homosalate antagonists to androgen and progesterone receptors, and avobenzone increased estrogen activity and antagonized androgen reception, consistent with published research, and evidencing each chemical's likely endocrine disruption); Slijkerman, D. M. E., et al., *Sunscreen Ecoproducts: Product Claims, Potential Effects and Environmental Risks of Applied UV Filters* (Wageningen Marine Research 2018), available at https://research.wur.nl/en/publications/sunscreen-ecoproducts-product-claims-potential-effects-and-enviro ("***Slijkerman Article***") (summarizing toxicity of organic UV filters based on literary review, noting endocrine toxicity (estrogenic disruption by octocrylene, homosalate, and oxybenzone), toxicity to corals (coral bleaching, viral infections); testing toxicity of sunscreen product A (which contain 3% avobenzone, 7.5% homosalate, 5% octisalate, 2.75% octocrylene, and 2% oxybenzone) and product B (which contains 7% homosalate, 3% octocrylene, 3% avobenzone, and 3% octisalate) on rotifers and haptophyte algal species *s. constatum* and *s. armata* , finding the sunscreen killed 50% of the tested population at levels ranging from 0.4 to 4.8 mg/L); Thorel, Evane, et al., *Effect of 10 UV Filters on the Brine Shrimp Artemia salina and the Marine Microalga Tetraselmis sp*, 8(2) Toxics. 29 (Apr. 2020), available at https://pubmed.ncbi.nlm.nih.gov/32290111/ (accessed Feb. 15, 2022) ("***Thorel Article***") (evaluating the toxicity of avobenzone (BM), octisalate (ES), octocrylene (OC), and homosalate (HS), among 6 other UV filters, on marine organisms from two major trophic levels (algae, tetraselmis sp, and brine shrimp, artemia salina), and finding: (1) the lethal dose (LC_{50}) concentrations of avobenzone, homosalate, and octocrylene is as low as 1840, 2360, and 610 micrograms of the chemical per liter of water (μg/L), respectively, resulting in the death of 50% of the tested population of brine shrimp after 72 hours of exposure; (2) octisalate and benzophenone, a degradant of octocrylene, affected the metabolic activity of the algae at such low concentrations as 100 μg/L; (3) homosalate and benzophenone, a degradant of octocrylene, were lethal to algae at concentrations as low as 100 and 1000 micograms per liter of water, respectively; and (4) homosalate and octrocrylene were the "most toxic UV filters for the tested species"); Yang, Changwon, et al., *Homosalate Aggravates the Invasion of Human Trophoblast Cells as Well as Regulates Intracellular Signaling Pathways Including PI3K/AKT and MAPK Pathways*, 243(B) Environmental Pollution 1263-1273 (Dec. 2018), available at https://europepmc.org/article/med/30267922 ("***Yang Article***") (noting homosalate reported to be toxic to marine organisms and causing estrogenic activity, and, based on *in vitro* testing, finding homosolate decreased proliferative activity, promoted death, induced endoplasmic reticulum stress and mitochondrial morphological disturbances in human cells, and concluding homosalate adversely affected the survival proliferation, and invasiveness of human trophoblast cells); *EWG's Sunscreen Guide*, ENVIRONMENTAL WORKING GROUP, https://www.ewg.org/sunscreen/report/executive-summary/ (accessed Feb. 20, 2022) (noting numerous studies have linked common sunscreen ingredients to hormone disruption, including oxybenzone, a form of benzophenone (which is a degradant of octocrylene), and homosalate to hormone disruption at current permissible levels in sunscreens; and the FDA's recommendation for

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21. **Octisalate.** Like all Harmful Ingredients, and common to organic chemical UV filters, octisalate bioaccumulates and biomagnifies in aquatic species, including corals, which increases its bioavailability and, in turn, exacerbates its toxicity. Studies show homosalate has a number of toxicities to aquatic life. Notably, a few studies regarding the toxicity of UV filters to corals show that exposure to octisalate causes mitochondrial dysfunction and inflammation; within 72 hours, reduces coral growth; and within 18-48 hours causes complete bleaching and death. Similar to the other Harmful Ingredients, studies also show that octisalate is highly toxic to a variety of aquatic organisms and representative or other species, including corals, fish, planktonic crustaceans, rotifers, anemones, flat worms, plants, haptophyte algae, green algae, diatoms, and humans. Just like other organic UV filters, including the Harmful Ingredients, toxicities include endocrine disruption (e.g., increased estrogenic activity); developmental abnormalities (reduced growth in flatworms and corals; pedal disks weakly or not attached to container walls, tentacles or body columns not extended, no response to touch, discoloration in anemones); and death. Octisalate also enhances the absorption of herbicides and has deleterious effects on plant organisms (e.g., algae).[22]

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additional safety tests for avobenzone, homosalate, octisalate, and octocrylene); *Homosalate*, CAMPAIGN FOR SAFE COSMETICS, https://www.safecosmetics.org/get-the-facts/chemicals-of-concern/homosalate/ (accessed Feb. 20, 2022) (summarizing findings in scientific literature regarding homosalate, an organic UV filter, which has been associated with DNA damage, found to be an endocrine disruptor (particularly the estrogen, androgen, progesterone hormone systems, which impact the development and regulation of reproductive organs), and increases pesticide absorption).

[22] Gago-Ferrero, Pablo, et al., *An overview of UV-absorbing compounds (organic UV filters) in aquatic biota*, 404(9) Anal. Bioanal. Chem. 2597-2610 (Nov. 2012), available at https://pubmed.ncbi.nlm.nih.gov/22669305/ (Feb. 20, 2022) ("***Gago-Ferrero Article 2012***") (reviewing scientific literature regarding organic UV filters: (1) discussing the filters' physiochemical properties, noting high lipophilicity and poor biodegradability of UV filters, causing them to accumulate in effluent from wastewater treatment, sediments, and biota, and explaining that organic UV filters are expected to be stored faster than they are metabolized or excreted due to their low water solubility (lipophilic character); (2) noting likely biomagnifcation of UV filters in predator-prey pairs; (3) noting ubiquitous contamination of organic UV filters in oceans, likely due to sunscreens and personal care products, and their common toxic impact on the endocrine system; (4) reviewing scientific toxicity studies and noting, for example, octisalate is toxic to green algae (affected metabolic activity), flatworms (reduced growth rate), anemones (pedal disks weakly or not attached to container walls, tentacles or body columns not extended, no response to touch, discoloration), diatoms (decreased fluorescence), coral bleaching; (5) linking coral bleaching to sunscreen pollution and the toxic impact of UV filters, among other factors, noting toxicity studies of corals that show: (a) exposure to avobenzone, benzophenone, octocrylene, octisalate, among others, resulted in large discharge of coral mucus (zooxanthellae and coral tissue) within 18-48 hours and complete bleaching, and (b) exposure to homosalate, octocrylene,

benzophenone, octisalate, and avobenzone reduced coral growth.); Jiménez-Díaz, I., et al., *Simultaneous determination of the UV-filters benzyl salicylate, phenyl salicylate, octyl salicylate, homosalate, 3-(4-methylbenzylidene) camphor and 3-benzylidene camphor in human placental tissue by LC-MS/MS. Assessment of their in vitro endocrine activity*, 936 Journal of Chromatography Biomed Life Sci. 80-87 (Oct. 2013), available at https://pubmed.ncbi.nlm.nih.gov/24004914/ ("***Jimenez-Diaz Article***") (*in vitro* testing of organic UV filters' impact on human estrogen and androgen receptors, finding octisalate exposure caused increased estrogenic activity, consistent with studies finding these chemicals are endocrine disruptors); McCoshum, Shaun, et al., *Direct and indirect effects of sunscreen exposure for reef biota*, 776 Hydrobiologia 139-146 (2016), available at https://link.springer.com/article/10.1007/s10750-016-2746-2 ("***McCoshum Article***") (evaluating sunscreen concentration of 0.26 mL/L, containing homosalate, octocrylene, octisalate, and avobenzone, impact on flatworms *convolutriloba macropyga* with symbiotic algae, photosynthetic diatoms *nitzschia sp.*, *aiptasia* anemones, and pulse corals *xenia sp.*, after 72 hours of exposure, finding negative impact on estimations of population and significant growth reduction of exposed coral colonies and decreased florescence in *nitzschia sp.* Planktonic diatoms); Ouchene, Lydia, et al., *Hawaii and Other Jurisdictions Ban Oybenzone or Octionaxte Sunscreens Based on the Confirmed Adverse Environmental Effects of Sunscreen Ingredients on Aquatic Environments*, 23(6) J. Cutan. Med. Surg. 648-649, (Nov./Dec. 2019), available at https://pubmed.ncbi.nlm.nih.gov/31729915/ (accessed Feb. 20, 2022) ("***Ouchene Article***") (reviewing scientific literature, noting: (1) growing environmental concerns with the use of organic UV filters, including homosalate, octisalate, avobenzone, and octocrylene, which have been detected in water sources and supplies around the world; (2) frequent detection of octisalate, homosalate, and octocrylene in corals in Hawaii, revealing their omnipresence; (3) numerous studies detecting organic UV filters in marine organisms, including white fish, roach, perch, cod, rainbow trout, barb, chub, and mussels; (4) toxicity of UV filters that contribute to coral bleaching due to the activation of dormant viruses in symbiotic algae that corals then expel, causing coral death; (5) significant growth reduction of *xenia* coral colonies following exposure to sunscreen containing homosalate, oxybenzone, octocrylene, octisalate, and avobenzone after 72 hours exposure; (9) *in vitro* studies showing UV filters adversely affect reproductive behavior in rats, egg production in fish, and brain and liver development in zebra fish); Pont, Adam R., et al., *Active Ingredients in Sunscreens Act as Topical Penetration Enhancers for the Herbicide 2,4-Dichlorophenoxyacetic Acid*, 195(3) Toxicology and Applied Pharmacology 348-354 (Mar. 2004), available at https://pubmed.ncbi.nlm.nih.gov/15020197/ (accessed Feb. 20, 2021) ("***Pont Article***") (*in vitro* testing of herbicide penetration in hairless mouse skin after 24 hours of exposure to determine whether sunscreen formulations enhance dermal penetration, noting prior studies showed commercial sunscreens are penetration enhancers, finding octisalate, *inter alia*, significantly increased absorption of herbicide, and concluding "the active ingredients of sunscreen formulations enhance dermal penetration"); Slijkerman, D. M. E., et al., *Sunscreen Ecoproducts: Product Claims, Potential Effects and Environmental Risks of Applied UV Filters* (Wageningen Marine Research 2018), available at https://research.wur.nl/en/publications/sunscreen-ecoproducts-product-claims-potential-effects-and-enviro ("***Slijkerman Article***") (summarizing toxicity of organic UV filters based on literary review, noting toxicity to corals (coral bleaching, viral infections); and testing toxicity of sunscreen product A (which contain 3% avobenzone, 7.5% homosalate, 5% octisalate, 2.75% octocrylene, and 2% oxybenzone) and product B (which contains 7% homosalate, 3% octocrylene, 3% avobenzone, and 3% octisalate) on rotifers and haptophyte algal species *s. constatum* and *s. armata* , finding the sunscreen killed 50% of the tested population at levels ranging from 0.4 to 4.8 mg/L); Stien, Didier, et al., *A unique approach to monitor stress in coral exposed to emerging pollutants*, 10(1) Sci. Rep. 9601 (June 2020), available at https://pubmed.ncbi.nlm.nih.gov/32541793/ (accessed Feb. 15, 2022) ("***Stien Article 2020***") (finding corals, *pocillopora damicornis*, exposed to low concentrations of 50 micrograms of octocrylene or octisalate per liter of water showed metabolomic stress markers, including mitochondrial dysfunction and inflammation); Thorel, Evane, et al., *Effect of 10 UV Filters on the Brine Shrimp Artemia salina and the Marine Microalga Tetraselmis sp*, 8(2) Toxics. 29 (Apr. 2020), available at https://pubmed.ncbi.nlm.nih.gov/32290111/ ("***Thorel Article***") (evaluating the toxicity

22. **Product Testing of Defendant's Banana Boat Sunscreens.** In an article published in April 2020, researchers surveyed consumers to identify the most popular brand sunscreens, which included Banana Boat and Hawaiian Tropic sunscreens manufactured by Defendant, some of which are at issue in this case, to identify sunscreens to study its acute toxicity. The researchers determined the lethal concentration (LC) at which those sunscreens would result in death to 10% (LC_{10}) or 50% (LC_{50}) of various representative zooplankton species in fresh and salt water solutions after only 24 hours of exposure. They found: (1) Banana Boat's LC_{10} ranged from 1.00E-02 to 4.E-01 grams sunscreen per liter of water; and (2) Banana Boat's LC_{50} ranged from 1.00E+00 to 2.10E-01 grams sunscreen per liter of water. They also conducted an environmental risk assessment that factored in unknown variables and the presence of the Harmful Ingredients in existing areas to determine the severity and urgency of the need to intervene in those regions to protect marine life, pointedly noting "Banana Boat. . . [presents] high risks to aquatic life," which is the most severe and urgent rating available. They concluded, in sum: "Sunscreens are persistent contaminants . . . . Consequently, we consider this situation to be a hazard to aquatic life, because sunscreens have lethal and sublethal effects, they can bioaccumulate and biomagnify, and, consequently, they may cause mortality, morphological alterations and endocrine disruption in aquatic life.[23]

23. **United Nations' Aquatic Hazard Classification.** The Harmful Ingredients, avobenzone, homosalate, and octocrylene, have already been classified as hazardous to aquatic life under the United Nations' Globally Harmonized System of Classification and Labeling of

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of avobenzone (BM), octisalate (ES), octocrylene (OC), and homosalate (HS), among 6 other UV filters, on marine organisms from two major trophic levels (algae, tetraselmis sp, and brine shrimp, artemia salina), and finding: (1) the lethal dose (LC_{50}) concentrations of avobenzone, homosalate, and octocrylene is as low as 1840, 2360, and 610 micrograms of the chemical per liter of water (μg/L), respectively, resulting in the death of 50% of the tested population of brine shrimp after 72 hours of exposure; (2) octisalate and benzophenone, a degradant of octocrylene, affected the metabolic activity of the algae at such low concentrations as 100 μg/L; (3) homosalate and benzophenone, a degradant of octocrylene, were lethal to algae at concentrations as low as 100 and 1000 micograms per liter of water, respectively; and (4) further noting that homosalate and octrocrylene were the "most toxic UV filters for the tested species").

[23] Hernandez-Pedraza, Miguel, et al., *Toxicity and Hazards of Biodegradable and Non-Biodegradable Sunscreens to Aquatic Life of Quintana Roo, Mexico*, 12(8) Sustainability 3270 (Apr. 17, 2020), available at https://www.sciencedirect.com/science/article/pii/S0160412019325656?via%3Dihub (accessed Feb. 15, 2022) ("***Hernandez-Pedraza Article***").

Chemicals ("**GHS**") because they either "may cause long lasting harmful effects to aquatic life" (i.e., they are "hazardous to the aquatic environment," or present a "long term hazard") or have been deemed "very toxic to aquatic life" with "long lasting effects."[24]

24. **The HEL—Octrocrylene.** The Haerecticus Environmental Laboratory ("**HEL**") is a nonprofit organization that specializes in research and advocacy in a number of areas including sunscreens and how their ingredients impact natural environmental habitats. Regarding certain harmful ingredients used in sunscreens, the HEL reports that octrocrylene is a chemical that causes harm and/or can kill coral reefs and pose a substantial threat to ecosystem health.[25]

25. **The NOS—Octrocrylene.** The National Ocean Service ("**NOS**") also advocates against the use of certain chemicals, including octocrylene, in the use of sunscreen because of the severe negative impact that is has on coral reefs.[26] The NOS classifies octrocylene as a threat to coral reefs, as well as marine ecosystems.[27]

26. **The Hawaii Center for Biological Diversity (the "Center")—Octrocrylene & Avobenzone.** The Center is petitioning the FDA for a national ban on chemicals, like octocrylene and avobenzone, in sunscreens that harm and kill the coral reefs.[28] The center is also advocating for

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[24] *See Avobenzone*, NATIONAL INSTITUTE OF HEALTH, https://pubchem.ncbi.nlm.nih.gov/compound/Avobenzone#section=GHS-Classification (accessed Feb. 10, 2022) (the GHS H413 classification of avobenzone means that it "may cause long lasting harmful effects to aquatic life [Hazardous to the aquatic environment, long-term hazard]") (brackets in original); *Octocrylene*, NATIONAL INSTITUTE OF HEALTH, https://pubchem.ncbi.nlm.nih.gov/compound/Octocrylene#section=GHS-Classification (accessed Jan. 6, 2022) (the GHS H410 classification of octocrylene means that it is "very toxic to aquatic life" with "long lasting effects"); *Homosalate*, NATIONAL INSTITUTE OF HEALTH, https://pubchem.ncbi.nlm.nih.gov/compound/Homosalate#section=Hazards-Identification (accessed Feb. 10, 2022) (the GHS H413 classification of avobenzone means that it "may cause long lasting harmful effects to aquatic life [Hazardous to the aquatic environment, long-term hazard]") (brackets in original).

[25] *Protect Land + Sea Certification*, HAERETICUS ENVIRONMENTAL LABORATORY, http://haereticus-lab.org/protect-land-sea-certification-3/ (accessed Sept. 29, 2021).

[26] *Skincare Chemicals and Coral Reefs*, NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION, https://oceanservice.noaa.gov/news/sunscreen-corals.html (accessed Sept. 29, 2021).

[27] *Skincare Chemicals and Coral Reefs*, NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION, https://oceanservice.noaa.gov/news/sunscreen-corals.html (accessed Sept. 29, 2021).

[28] *Hawai'i Senate Bill Bans Harmful Sunscreen Chemicals*, CENTER FOR BIOLOGICAL DIVERSITY (March 9, 2021), https://biologicaldiversity.org/w/news/press-releases/hawaii-senate-bill-bans-harmful-sunscreen-chemicals-2021-03-09/ (accessed Sept. 29, 2021).

a statewide ban of octocrylene and avobenzone in sunscreens, noting the toxic impacts these chemicals have on the coral reefs and marine life.[29]

27. **FDA Petition—Octrocrylene.** In fact, a larger group of researchers have also petitioned the FDA to remove from sale all sunscreens that contain octocrylene.[30] Because products made with octocrylene may contain benzophenone, a known carcinogen, and is considered to be an endocrine, metabolic, and reproductive disruptor.[31]

28. **Hawaii Legislature—Octrocrylene & Avobenzone.** In 2018, state lawmakers banned oxybenzone and octinoxate from being included as ingredients in sunscreens sold in Hawaii because of their deleterious impact on coral reefs and dependent marine life. In 2021, state lawmakers sought to amend the law to also ban the sale of sunscreens that contain avobenzone and octocrylene starting in 2023.[32]

29. **Domestic and International Bans—Octrocrylene & Homosalate.** In June 2019, the US Virgin Islands banned sunscreens containing octocrylene, oxybenzone, and octinoxate, with the ban effective beginning March 2020. 27 V.I.C. § 305h (enacted Jul. 20, 2019) (prohibiting the sale, distribution, use, and possession after March 30, 2020, as well as the importation after September 30, 2019, of sunscreen products in the Virgin Islands that contain oxybenzone, octocrylene, or octinoxate).[33] In addition, Palau, Bonaire, and the nature reserve areas in Mexico have approved

[29] *Hawai'i Senate Bill Bans Harmful Sunscreen Chemicals*, CENTER FOR BIOLOGICAL DIVERSITY (March 9, 2021), https://biologicaldiversity.org/w/news/press-releases/hawaii-senate-bill-bans-harmful-sunscreen-chemicals-2021-03-09/ (accessed Sept. 29, 2021).

[30] *Popular sunscreens under scrutiny as scientists cite another potential carcinogen*, LOS ANGELES TIMES (Aug. 10, 2021), https://www.latimes.com/business/story/2021-08-10/sunscreen-fda-carcinogen-benzophenone-octocrylene-concerns (accessed Sept. 29, 2021).

[31] *Popular sunscreens under scrutiny as scientists cite another potential carcinogen*, LOS ANGELES TIMES (Aug. 10, 2021), https://www.latimes.com/business/story/2021-08-10/sunscreen-fda-carcinogen-benzophenone-octocrylene-concerns.

[32] *Hawaii Senate Bill SB132 SD2 HD1*, HAWAII STATE LEGISLATURE, https://www.capitol.hawaii.gov/measure_indiv.aspx?billtype=SB&billnumber=132&year=2021(a cessed on Sept. 29, 2021).

[33] Narla, Shanthi, et. al., *Sunscreen: FDA regulation, and environmental and health impact*, 19(1) Photochem. Photobiol. Sci. 66-70 (Jan. 2020), available at available at https://pubmed.ncbi.nlm.nih.gov/31845952/ (accessed Feb. 20, 2022) ("***Narla Article***") (reviewing literature and noting: (1) several legislative bans in Hawaii, Florida, U.S. Virgin Islands, Paulau, and Mexico on UV filters, including benzophenone and octocrylene, and similar discussions in Brazil and the European Union, due to concerns of coral bleaching; (2) FDA research showing

legislation for similar bans, and a similar ban is being discussed in Brazil and the European Union.[34] Furthermore, the European Union's Scientific Committee on Consumer Safety has recently evaluated homosalate's safety for human-use and, based on its research, recommended a ban on concentrations in excess of 0.5% in cosmetic products, such as sunscreens.[35] It more recently evaluated the safety of octocrylene for human-use and recommended a ban on concentrations in excess of 9% (sprays) to 10% (other).[36] Scientists in the United States have likewise raised concerns about the toxic nature of these ingredients, as well as homoslate, and believe they also have a harmful impact on reefs.[37]

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percutaneous absorption of avobenzone and octocrylene in human subjects; and (3) toxicity of oxybenzone, a type of benzophenone (which is an octocrylene degradant), including adverse endocrinological (hormonal) effects of in fish and rats, coral bleaching (inducing ossification and deformation of DNA in the larval stage), and lethal exposure after 4 hours to corals *in vitro* at concentrations as low as 8 to 340 $\mu g/L^{-1}$).

[34] Narla, Shanthi, et. al., *Sunscreen: FDA regulation, and environmental and health impact*, 19(1) Photochem. Photobiol. Sci. 66-70 (Jan. 2020), available at https://pubmed.ncbi.nlm.nih.gov/31845952/ (accessed Feb. 20, 2022) ("***Narla Article***") (reviewing literature and noting: (1) several legislative bans in Hawaii, Florida, U.S. Virgin Islands, Paulau, and Mexico on UV filters, including benzophenone and octocrylene, and similar discussions in Brazil and the European Union, due to concerns of coral bleaching; (2) FDA research showing percutaneous absorption of avobenzone and octocrylene in human subjects; and (3) toxicity of oxybenzone, a type of benzophenone (which is an octocrylene degradant), including adverse endocrinological (hormonal) effects of in fish and rats, coral bleaching (inducing ossification and deformation of DNA in the larval stage), and lethal exposure after 4 hours to corals *in vitro* at concentrations as low as 8 to 340 $\mu g/L^{-1}$).

[35] *Scientific Committee on Consumer Safety Opinion on Homosalate*, EUROPEAN UNION, https://ec.europa.eu/health/system/files/2021-06/sccs_o_244_0.pdf (accessed Feb. 10, 2022); *The Trouble with Ingredients In Sunscreen*, ENVIRONMENTAL WORKING GROUP, https://www.ewg.org/sunscreen/report/the-trouble-with-sunscreen-chemicals/ (accessed on Sept. 29, 2021).

[36] *Scientific Committee on Consumer Safety Opinion on Octocrylene*, EUROPEAN UNION, https://ec.europa.eu/health/system/files/2021-04/sccs_o_249_0.pdf (accessed Feb. 10, 2022).

[37] Yang, Changwon, et al., *Homosalate Aggravates the Invasion of Human Trophoblast Cells as Well as Regulates Intracellular Signaling Pathways Including PI3K/AKT and MAPK Pathways*, 243(B) Environmental Pollution 1263-1273 (Dec. 2018), available at https://europepmc.org/article/med/30267922 (accessed Feb. 20, 2022) ("***Yang Article***") (noting homosalate reported to be toxic to marine organisms and causing estrogenic activity, and, based on *in vitro* testing, finding homosolate decreased proliferative activity, promoted death, induced endoplasmic reticulum stress and mitochondrial morphological disturbances in human cells, and concluding homosalate adversely affected the survival proliferation, and invasiveness of human trophoblast cells); Park, Chang-Beom, et al., *Single- and Mixture Toxicity of Three Organic UV-Filters, Ethylhexyl Methoxycinnamate, Octocrylene, and Avobenzone on Daphnia Magna*, 137 Ecotoxicology and Environmental Safety 57-63 (Mar. 2017), available at https://www.researchgate.net/publication/311425878_Single-_and_mixture_toxicity_of_three_organic_UV-

30. **The Kohala Center ("KC")—Avobenzone, Homosalate, Octisalate, and Octocrylene.** KC is an independent, community-based center for research, conservation, and education in Hawaii, focusing on energy, self-reliance, and ecosystem health.[38] KC cautions consumers to never use products containing avonbenzone, homosalate, octisalate, or octocrylene.[39]

E. The Products' Misleading and Deceptive Labeling

31. **Consumers' Desire for "Reef Friendly" Sunscreens.** Consequently, because of the ecological concerns about these harmful chemicals, consumers have increasingly sought out sunscreens that contain only ingredients that are safe for coral reefs. As a result, sales of "Reef Friendly," "Reef Conscious," and "Reef Safe" sunscreens have surged in recent years. This trend to purchase environmentally friendly sunscreens is consistent with the overarching consumer trend

filters_ethylhexyl_methoxycinnamate_octocrylene_and_avobenzone_on_Daphnia_magna (accessed Feb. 20, 2022) ("***Park Article***") (testing toxicity of organic UV filters, including octocrylene and avobenzone, on daphnia magna, a planktonic crustacean, finding low concentrations of 1 µg/ml immobilized 25% of the tested population, concentrations of 3.18 and 1.95 µg/ml, respectively, immobilized 50%, and 40 µg/ml immobilized 90%; after 48 hours exposure, immobilized daphnia had UV filters sticking to its body at 10 µg/ml octocrylene; and avobenzone bioaccumulated in daphnia at 20 µg/ml); McCoshum, Shaun, et al., *Direct and indirect effects of sunscreen exposure for reef biota*, 776 Hydrobiologia 139-146 (2016), available at https://link.springer.com/article/10.1007/s10750-016-2746-2 (accessed Feb. 20, 2022) ("***McCoshum Article***") (evaluating sunscreen concentration of 0.26 mL/L, containing homosalate, octocrylene, octisalate, and avobenzone, impact on flatworms *convolutriloba macropyga* with symbiotic algae, photosynthetic diatoms *nitzschia sp.*, *aiptasia* anemones, and pulse corals *xenia sp.*, after 72 hours of exposure, finding negative impact on estimations of population and significant growth reduction of exposed coral colonies and decreased florescence in *nitzschia sp.* Planktonic diatoms); Slijkerman, D. M. E., et al., *Sunscreen Ecoproducts: Product Claims, Potential Effects and Environmental Risks of Applied UV Filters* (Wageningen Marine Research 2018), available at https://research.wur.nl/en/publications/sunscreen-ecoproducts-product-claims-potential-effects-and-enviro (accessed Feb. 20, 2022) ("***Slijkerman Article***") (summarizing toxicity of organic UV filters based on literary review, noting genotoxicity (DNA damage to corals by oxybenzone, a type of benzophenone, which is a degradant of octocrylene), endocrine toxicity (estrogenic disruption by octocrylene, homosalate, and oxybenzone), decreased reproductivity (oxybenzone effect on fish), developmental toxicity (oxybenzone and octocrylene on fish embryos), phototoxicity (photo degradation resulting in lipid, protein, and DNA damage by oxybenzone and octocrylene), toxicity to corals (coral bleaching, viral infections); testing toxicity of sunscreen product A (which contain 3% avobenzone, 7.5% homosalate, 5% octisalate, 2.75% octocrylene, and 2% oxybenzone) and product B (which contains 7% homosalate, 3% octocrylene, 3% avobenzone, and 3% octisalate) on rotifers and haptophyte algal species *s. constatum* and *s. armata* , finding the sunscreen killed 50% of the tested population at levels ranging from 0.4 to 4.8 mg/L).

[38] *About the Kohala Center*, THE KOHALA CENTER, https://kohalacenter.org/about (accessed Feb. 9, 2022).

[39] *Are you using Mineral Sunscreen?*, THE KOHALA CENTER, https://kohalacenter.org/kbec/sun-protection (accessed Feb. 9, 2022).

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to buy "green" or similar products.

32. **Products.** As described *supra*, Defendant manufactures, markets, advertises, labels, packages, and sells the Products—Banana Boat® Sport Ultra, Sport Ultra Faces, and Sport Coolzone Sunscreens in various topical applications (lotion, spray, stick), SPFs (15, 30, and 50+), and sizes (ranging from 1-oz to 12-oz) with the Challenged Representation on the front label, despite each Product containing the Harmful Ingredients, in varying combinations and/or concentrations.

33. **Challenged Representations on Products' Front Labels.** Also as described *supra*, Defendant falsely and misleadingly labels the Products with the Reef Friendly Representation. The Reef Friendly Representation is found on a blue-green or teal, circular image on each Product's primary display panel of the front label or packaging. *See* **Exhibit 1** [Product Images]. In the center of the circular image, it depicts a coral reef. *Id.* Along the top edge of the circular image, in prominent all-capitals typeface and thick lettering that starkly contrasts with the orange, yellow, and dark navy- or royal-blue background, it states: "REEF FRIENDLY." *Id.* Defendant reinforces and emphasizes the Reef Friendly Representation on each Product with both the picture of a coral reef and its blue-green or teal coloring that stands out in comparison to the rest of the label to draw the attention of consumers to this False Advertising Claim. *Id.*

34. **Reasonable Consumers' Perception.** Based on the Challenged Representation, reasonable consumers believe that the Products are safe for reefs, including the corals and inhabiting and/or co-dependent marine life. Put differently, reasonable consumers believe that the Products do not contain ***any*** ingredients that can harm and/or kill reefs, including corals and inhabiting and/or co-dependent marine life. This perception is consistent with standard dictionary definitions, regulatory definitions, and the California legislature's interpretation of environmental advertising claims.

a. **Dictionary—Friendly.** The Merriam-Webster standard dictionary defines "friendly" as "not causing or likely to cause harm," and provides the apt example:

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"environmentally *friendly* packaging = packaging that does not damage the environment."[40]

b. **Dictionary—Eco-Friendly.** The Merriam-Webster standard dictionary defines "eco- friendly" as "not environmentally harmful."[41]

c. **FTC Green Guides.** Notably, the FTC promulgated the Guides for the Use of Environmental Marketing Claims, codified at 16 C.F.R. 260.1, *et seq.* ("**Green Guides**"), to "help marketers avoid making environmental marketing claims that are unfair or deceptive" based on the FTC's "views on how reasonable consumers likely interpret [those] claims." *Id.* at § 260.1(a), (d). In its view, "[u]nqualified general environmental benefit claims . . . likely convey that the product . . . has specific and far-reaching environmental benefits and may convey that the item . . . has ***no negative environmental impact***." *Id.* at § 260.4(b) (providing "***Eco-Friendly***" as an example) (emphasis added).

d. **California Legislature.** The California legislature codified the Green Guides to make it "unlawful for a person to make an untruthful, deceptive, or misleading environmental claim, whether explicit or implied." Cal. Bus. & Prof. Code § 17580.5. California viewed terms "on the label or container of a consumer good" like "environmental choice," ***ecologically friendly***," ***earth friendly***," "***environmentally friendly***," ecologically sound," "environmentally sound," "environmentally safe," "ecologically safe," environmentally lite," "green product," "***or any other like term***," to mean that the product "***is not harmful to***, or is beneficial to, ***the natural environment***." *Id.* at §§ 17580(a) (emphasis added); *see also id.* at § 17581 (criminalizing such deceptive labeling claims).

35. **True Reef Friendly Sunscreens.** True Reef Friendly sunscreens do not contain ***any*** harmful chemical ingredients. Many environmental organizations have favored mineral active

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[40] *Friendly*, MERRIAM-WEBSTER, https://www.merriam-webster.com/dictionary/friendly (accessed Feb. 10, 2022) (emphasis in original; brackets omitted).

[41] *Eco-Friendly*, MERRIAM-WEBSTER, https://www.merriam-webster.com/dictionary/eco-friendly (accessed Feb. 3, 2022).

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ingredients that provide sun protection, such as zinc oxide and titanium dioxide, because they have not been determined unsafe for people, the environment, or aquatic life, like coral reefs. However, mineral active ingredients, in comparison to chemical active ingredients, are more expensive, which in turn increases production costs and decreases a manufacturer's profit margins. In this way, manufacturers, such as Defendant, "greenwash" their sunscreens by labeling them with environmentally friendly claims, such as the Reef Friendly Representations, to charge consumers with a premium for "reef friendly" sunscreens, gain an unfair advantage over their competitors, and defraud consumers into buying the Products even though they contain Harmful Ingredients that can harm or kill coral reefs.

F. <u>Plaintiff and Reasonable Consumers Were Misled by the Products</u>

36. **Misrepresentations.** Labeling the Products with the Reef Friendly Representation when they contain Harmful Ingredients that are known to harm and/or kill coral reefs is wholly misleading and deceptive.

37. **Material.** The Reef Friendly Representation was and is material to reasonable consumers, including Plaintiff, in making the decision to purchase the Products.

38. **Reliance.** Plaintiff and reasonable consumers relied on the Reef Friendly Representation in deciding to purchase the Products.

39. **Consumers Lack Knowledge of Falsity.** At the time Plaintiff purchased the Products, Plaintiff did not know, and had no reason to know, that the Products' labeling and advertising were false, misleading, deceptive, and unlawful as set forth herein.

40. **Misrepresentation/Omission.** The Reef Friendly Representation materially misrepresented that the Products contain only ingredients that are safe for coral reefs, when the Products actually contain Harmful Ingredients that are not safe for coral reefs.

41. **Defendant's Knowledge.** Defendant knew, or should have known, that the Reef Friendly Representation was false, misleading, deceptive, and unlawful, at the time that it advertised the Products using the Reef Friendly Representations, and Defendant intentionally and deliberately used the Reef Friendly Representations on the Products' labeling, packaging, and advertising to cause Plaintiff and similarly situated consumers to believe that the Products are safe for coral reefs

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and buy them. The conspicuousness of the Challenged Representation on the Products' labels and repeated use of the Challenged Representation in advertisements demonstrate Defendant's awareness of the materiality of this representation and understanding that consumers prefer and are motivated to buy products that conform to the Challenged Representation. Generally, manufacturers and marketers repeat marketing messages to emphasize and characterize a brand or product line. Similarly, they reserve the front primary display panel of labels on consumer products of similar dimensions for the most important and persuasive information that they believe will motivate consumers to buy the products. Defendant, as the manufacturer, formulated the Products with the Harmful Ingredients and otherwise approved their inclusion in the Products. Defendant, as the manufacturer, had exclusive control over the Challenged Representation's inclusion on the Products' labels and in their advertisements—i.e., Defendant readily and easily could have removed the Challenged Representation or refrained from using it on the labels and advertisements of the Products. Defendant is and was, at all times, statutorily required to ensure it has adequate substantiation for the Challenged Representation prior to labeling the Products, advertising the Products, and selling the Products anywhere in the United States. Here, adequate substantiation and compliance with regulatory law require reliable scientific evidence that supports such far-reaching environment-friendly and/or eco-friendly claims as the Challenged Representation. Thus, Defendant knew, or should have known, at all relevant times, that the Challenged Representation is false and/or deceptive and reasonable consumers, such as Plaintiff, are being misled into buying the Products based on the belief that the Challenged Representation is true.

42. **Detriment.** Plaintiff and similarly situated consumers would not have purchased the Products, or would not have purchased the Products for as great a price, if they had known the truth about the Reef Friendly Representations. Accordingly, based on Defendant's material misrepresentations and omissions, reasonable consumers, including Plaintiff, purchased the Products to their detriment.

G. <u>The Products are Substantially Similar</u>

43. As described herein, Plaintiff purchased the Banana Boat Sport Ultra Sunscreen Lotion SPF 30 ("**Purchased Product**"). The additional products identified above in paragraph 4

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["The Products"] (collectively, the "**Unpurchased Products**") are substantially similar to the Purchased Product.

a. **Defendant.** All Products are manufactured, sold, marketed, advertised, labeled, and packaged by Defendant.

b. **Brand.** All Products are sold under the Banana Boat trademarked brand name.

c. **Product Line.** All Products are sold under Banana Boat's product line called "Sport."

d. **Marketing Demographics.** All Products are marketed directly to consumers for personal use.

e. **Purpose.** All Products are sunscreens.

f. **Application.** All Products are applied in the same manner—topically, directly onto the skin.

g. **Misrepresentations.** All Products contain the same Reef Friendly Representation. In addition, all Products prominently display the exact same Reef Friendly Representation on the front primary display panel of the label, in the same boldly contrasting color typeface, in a blue-green or teal font set against an orange, yellow, and navy- or royal-blue background, and include an image of a coral reef.

h. **Packaging.** All Products are packaged in similar packaging using a similar color scheme.

i. **Other Representations.** All Products contain substantially the same additional claims on the Products' packaging and labeling, including the same representations (e.g., identifying the brand, Products as sunscreens, their SPF, and volume or size).

j. **Key Ingredients.** All Products contain the same Harmful Ingredients (namely, a combination of octocrylene, avobenzone, homosalate, and/or octisalate).

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k. **Misleading Effect.** The misleading effect of the Products' labels on consumers is the same for all Products—consumers pay for sunscreens that are safe for coral reefs but receive sunscreens that are not safe.

H. <u>No Adequate Remedy at Law</u>

44. **No Adequate Remedy at Law.** Plaintiff and members of the Class are entitled to equitable relief as no adequate remedy at law exists.

a. **Broader Statutes of Limitations.** The statutes of limitations for the causes of action pled herein vary. The limitations period is four years for claims brought under the UCL, which is one year longer than the statutes of limitations under the FAL and CLRA. In addition, the statutes of limitations vary for certain states' laws for breach of warranty and unjust enrichment/restitution, between approximately 2 to 6 years. Thus, California Subclass members who purchased the Products more than 3 years prior to the filing of the complaint will be barred from recovery if equitable relief were not permitted under the UCL. Similarly, Nationwide Class members who purchased the Products prior to the furthest reach-back under the statute of limitations for breach of warranty, will be barred from recovery if equitable relief were not permitted for restitution/unjust enrichment.

b. **Broader Scope of Conduct.** In addition, the scope of actionable misconduct under the unfair prong of the UCL is broader than the other causes of action asserted herein. It includes, for example, Defendant's overall unfair marketing scheme to promote and brand the Products with the Challenged Representation, across a multitude of media platforms, including the Products' labels and packaging, over a long period of time, in order to gain an unfair advantage over competitor products and to take advantage of consumers' desire for products that comport with the Challenged Representation. The UCL also creates a cause of action for violations of law (such as statutory or regulatory requirements related to representations and omissions made on the type of products at issue). Thus,

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Plaintiff and Class members may be entitled to restitution under the UCL, while not entitled to damages under other causes of action asserted herein (e.g., the FAL requires actual or constructive knowledge of the falsity; the CLRA is limited to certain types of plaintiffs (an individual who seeks or acquires, by purchase or lease, any goods or services for personal, family, or household purposes) and other statutorily enumerated conduct). Similarly, unjust enrichment/restitution is broader than breach of warranty. For example, in some states, breach of warranty may require privity of contract or pre-lawsuit notice, which are not typically required to establish unjust enrichment/restitution. Thus, Plaintiff and Class members may be entitled to recover under unjust enrichment/restitution, while not entitled to damages under breach of warranty, because they purchased the products from third-party retailers or provide adequate pre-lawsuit notice prior to the commencement of this action.

c. **Injunctive Relief to Cease Misconduct and Dispel Misperception.** Injunctive relief is appropriate on behalf of Plaintiff and members of the Class because Defendant continues to misrepresent the Products with the Challenged Representation. Injunctive relief is necessary to prevent Defendant from continuing to engage in the unfair, fraudulent, and/or unlawful conduct described herein and to prevent future harm—none of which can be achieved through available legal remedies (such as monetary damages to compensate past harm). Further, injunctive relief, in the form of affirmative disclosures is necessary to dispel the public misperception about the Products that has resulted from years of Defendant's unfair, fraudulent, and unlawful marketing efforts. Such disclosures would include, but are not limited to, publicly disseminated statements that the Products Challenged Representation is not true and providing accurate information about the Products' true nature; and/or requiring prominent qualifications and/or disclaimers on the Products' front label concerning the Products' true nature. An injunction requiring affirmative disclosures to dispel

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the public's misperception, and prevent the ongoing deception and repeat purchases based thereon, is also not available through a legal remedy (such as monetary damages). In addition, Plaintiff is unable at present to accurately quantify the damages caused by Defendant's future harm, rendering injunctive relief all the more necessary. For example, because the court has not yet certified any class, the following remains unknown: the scope of the class, the identities of its members, their respective purchasing practices, prices of future Product sales, and quantities of future Product sales.

d. **Public Injunction.** Further, because a "public injunction" is available under the UCL, damages will not adequately "benefit the general public" in a manner equivalent to an injunction.

e. **California vs. Nationwide Class Claims**. Violation of the UCL, FAL, and CLRA are claims asserted on behalf of Plaintiff and the California Subclass against non-California Defendants, while breach of warranty and unjust enrichment/restitution are asserted on behalf of Plaintiff and the Nationwide Class. Dismissal of farther-reaching claims would bar recovery for non-California members of the Class.

f. **Procedural Posture—Incomplete Discovery & Pre-Certification.** Lastly, this is the first pleading in this action and discovery has not yet commenced and/or is at its initial stages. No class has been certified yet. The completion of fact/non-expert and expert discovery, as well as the certification of this case as a class action, are necessary to finalize and determine all available and unavailable remedies, including legal and equitable, for Plaintiff(s)'s individual claims and any certified class or subclass. Plaintiff(s) therefore reserve their right to amend this complaint and/or assert additional facts that demonstrate this Court's jurisdiction to order equitable remedies where no adequate legal remedies exist for either Plaintiff and/or any certified class or subclass. Such proof, to the extent necessary, will be presented prior to the trial of any equitable claims for relief and/or the entry of an order granting equitable relief.

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VI.

CLASS ACTION ALLEGATIONS

45. **Class Definition.** Plaintiff brings this action as a class action pursuant to Federal Rules of Civil Procedure 23(b)(2) and 23(b)(3) on behalf of herself and all others similarly situated, and as members of the Classes defined as follows:

> All residents of the United States who, within the applicable statute of limitations periods, purchased the Products for purposes other than resale ("**Nationwide Class**"); and
>
> All residents of California who, within four years prior to the filing of this Complaint, purchased the Products for purposes other than resale ("**California Subclass**").

("Nationwide Class" and "California Subclass," collectively, "**Class**").

46. **Class Definition Exclusions.** Excluded from the Class are: (i) Defendant, its assigns, successors, and legal representatives; (ii) any entities in which Defendant has controlling interests; (iii) federal, state, and/or local governments, including, but not limited to, their departments, agencies, divisions, bureaus, boards, sections, groups, counsels, and/or subdivisions; and (iv) any judicial officer presiding over this matter and person within the third degree of consanguinity to such judicial officer.

47. **Reservation of Rights to Amend the Class Definition.** Plaintiff reserves the right to amend or otherwise alter the class definition presented to the Court at the appropriate time in response to facts learned through discovery, legal arguments advanced by Defendant, or otherwise.

48. **Numerosity:** Members of the Class are so numerous that joinder of all members is impracticable. Upon information and belief, the Nationwide Class consists of tens of thousands of purchasers (if not more) dispersed throughout the United States, and the California Subclass likewise consists of thousands of purchasers (if not more) dispersed throughout the State of California. Accordingly, it would be impracticable to join all members of the Class before the Court.

49. **Common Questions Predominate:** There are numerous and substantial questions of law or fact common to all members of the Class that predominate over any individual issues. Included within the common questions of law or fact are:

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a. Whether Defendant engaged in unlawful, unfair or deceptive business practices by advertising and selling the Products;

b. Whether Defendant's conduct of advertising and selling the Products as containing only reef friendly ingredients when they do not constitutes an unfair method of competition, or unfair or deceptive act or practice, in violation of Civil Code section 1750, *et seq*.;

c. Whether Defendant used deceptive representations in connection with the sale of the Products in violation of Civil Code section 1750, *et seq*.;

d. Whether Defendant represented that the Products have characteristics or quantities that they do not have in violation of Civil Code section 1750, *et seq*.;

e. Whether Defendant advertised the Products with intent not to sell them as advertised in violation of Civil Code section 1750, *et seq*.;

f. Whether Defendant's labeling and advertising of the Products are untrue or misleading in violation of Business and Professions Code section 17500, *et seq*.;

g. Whether Defendant knew or by the exercise of reasonable care should have known its labeling and advertising was and is untrue or misleading in violation of Business and Professions Code section 17500, *et seq*.;

h. Whether Defendant's conduct is an unfair business practice within the meaning of Business and Professions Code section 17200, *et seq*.;

i. Whether Defendant's conduct is a fraudulent business practice within the meaning of Business and Professions Code section 17200, *et seq*.;

j. Whether Defendant's conduct is an unlawful business practice within the meaning of Business and Professions Code section 17200, *et seq*.;

k. Whether Plaintiff and the Class paid more money for the Products than they actually received;

l. How much more money Plaintiff and the Class paid for the Products than they actually received;

m. Whether Defendant's conduct constitutes breach of warranty;

n. Whether Plaintiff and the Class are entitled to injunctive relief; and

o. Whether Defendant was unjustly enriched by their unlawful conduct.

50. **Typicality**: Plaintiff's claims are typical of the claims of the Class Members she seeks to represent because Plaintiff, like the Class Members, purchased Defendant's misleading and deceptive Products. Defendant's unlawful, unfair and/or fraudulent actions concern the same business practices described herein irrespective of where they occurred or were experienced. Plaintiff and the Class sustained similar injuries arising out of Defendant's conduct. Plaintiff's and

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Class Members' claims arise from the same practices and course of conduct and are based on the same legal theories.

51. **Adequacy**: Plaintiff is an adequate representative of the Class he seeks to represent because his interests do not conflict with the interests of the Class Members Plaintiff seeks to represent. Plaintiff will fairly and adequately protect Class Members' interests and has retained counsel experienced and competent in the prosecution of complex class actions, including complex questions that arise in consumer protection litigation.

52. **Superiority and Substantial Benefit:** A class action is superior to other methods for the fair and efficient adjudication of this controversy, since individual joinder of all members of the Class is impracticable and no other group method of adjudication of all claims asserted herein is more efficient and manageable for at least the following reasons:

a. The claims presented in this case predominate over any questions of law or fact, if any exist at all, affecting any individual member of the Class;

b. Absent a Class, the members of the Class will continue to suffer damage and Defendant's unlawful conduct will continue without remedy while Defendant profits from and enjoy its ill-gotten gains;

c. Given the size of individual Class Members' claims, few, if any, Class Members could afford to or would seek legal redress individually for the wrongs Defendant committed against them, and absent Class Members have no substantial interest in individually controlling the prosecution of individual actions;

d. When the liability of Defendant has been adjudicated, claims of all members of the Class can be administered efficiently and/or determined uniformly by the Court; and

e. This action presents no difficulty that would impede its management by the Court as a class action, which is the best available means by which Plaintiff and Class Members can seek redress for the harm caused to them by Defendant.

53. **Inconsistent Rulings.** Because Plaintiff seeks relief for all members of the Class, the prosecution of separate actions by individual members would create a risk of inconsistent or varying adjudications with respect to individual members of the Class, which would establish incompatible standards of conduct for Defendant.

54. **Injunctive/Equitable Relief.** The prerequisites to maintaining a class action for injunctive or equitable relief pursuant to Fed. R. Civ. P. 23(b)(2) are met as Defendant has acted or

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refused to act on grounds generally applicable to the Class, thereby making appropriate final injunctive or equitable relief with respect to the Class as a whole.

55. **Manageability.** Plaintiff and Plaintiff's counsel are unaware of any difficulties that are likely to be encountered in the management of this action that would preclude its maintenance as a class action.

VII.

FIRST CAUSE OF ACTION

Violation of California Unfair Competition Law

(Cal. Bus. & Prof. Code §§ 17200, *et seq*.)

(*On Behalf of the California Subclass*)

56. **Incorporation by Reference.** Plaintiff re-alleges and incorporates by reference all allegations contained in this complaint, as though fully set forth herein.

57. **California Subclass.** This cause of action is brought pursuant to Business and Professions Code Section 17200, *et seq*., on behalf of Plaintiff and a California Subclass who purchased the Products within the applicable statute of limitations.

58. **The UCL.** California Business & Professions Code, sections 17200, *et seq.* (the **"UCL"**) prohibits unfair competition and provides, in pertinent part, that "unfair competition shall mean and include unlawful, unfair or fraudulent business practices and unfair, deceptive, untrue or misleading advertising."

59. **False Advertising Claims.** Defendant, in its advertising and packaging of the Products, made false and misleading statements and fraudulent omissions regarding the quality and characteristics of the Products—specifically, the Reef Friendly Representation—despite the fact the Products contain chemical ingredients that can harm and/or kill coral reefs. Such claims and omissions appear on the label and packaging of the Products, which are sold at retail stores and point-of-purchase displays.

60. **Defendant's Deliberately False and Fraudulent Marketing Scheme.** Defendant does not have any reasonable basis for the claims about the Products made in Defendant's advertising and on Defendant's packaging or labeling because the Products contain ingredients that

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can cause harm and/or kill coral reefs. Defendant knew and knows that the Products are not truly reef friendly sunscreens, though Defendant intentionally advertised and marketed the Products to deceive reasonable consumers into believing that Products contain only ingredients that are safe for coral reefs.

61. **False Advertising Claims Cause Purchase of Products.** Defendant's labeling and advertising of the Products led to, and continues to lead to, reasonable consumers, including Plaintiff, believing that the Products are truly reef friendly and do not harm and/or kill coral reefs.

62. **Injury in Fact.** Plaintiff and the California Subclass have suffered injury in fact and have lost money or property as a result of and in reliance upon Defendant's False Advertising Claims—namely Plaintiff and the California Subclass lost the purchase price for the Products they bought from the Defendant.

63. **Conduct Violates the UCL.** Defendant's conduct, as alleged herein, constitutes unfair, unlawful, and fraudulent business practices pursuant to the UCL. The UCL prohibits unfair competition and provides, in pertinent part, that "unfair competition shall mean and include unlawful, unfair or fraudulent business practices and unfair, deceptive, untrue or misleading advertising." Cal. Bus & Prof. Code § 17200. In addition, Defendant's use of various forms of advertising media to advertise, call attention to, or give publicity to the sale of goods or merchandise that are not as represented in any manner constitutes unfair competition, unfair, deceptive, untrue or misleading advertising, and an unlawful business practice within the meaning of Business and Professions Code Sections 17200 and 17531, which advertisements have deceived and are likely to deceive the consuming public, in violation of Business and Professions Code Section 17200.

64. **No Reasonably Available Alternatives/Legitimate Business Interests.** Defendant failed to avail themselves of reasonably available, lawful alternatives to further their legitimate business interests.

65. **Business Practice.** All of the conduct alleged herein occurred and continues to occur in Defendant's business. Defendant's wrongful conduct is part of a pattern, practice and/or generalized course of conduct, which will continue on a daily basis until Defendant voluntarily alters its conduct or Defendant is otherwise ordered to do so.

66. **Injunction.** Pursuant to Business and Professions Code Sections 17203 and 17535, Plaintiff and the members of the California Subclass seek an order of this Court enjoining Defendant from continuing to engage, use, or employ its practice of labeling and advertising the sale and use of the Products. Likewise, Plaintiff and the members of the California Subclass seek an order requiring Defendant to disclose such misrepresentations, and to preclude Defendant's failure to disclose the existence and significance of said misrepresentations.

67. **Causation/Damages.** As a direct and proximate result of Defendant's misconduct in violation of the UCL, Plaintiff and members of the California Subclass were harmed in the amount of the purchase price they paid for the Products. Further, Plaintiff and members of the California Subclass have suffered and continue to suffer economic losses and other damages including, but not limited to, the amounts paid for the Products, and any interest that would have accrued on those monies, in an amount to be proven at trial. Accordingly, Plaintiff seeks a monetary award for violation of the UCL in damages, restitution, and/or disgorgement of ill-gotten gains to compensate Plaintiff and the California Subclass for said monies, as well as injunctive relief to enjoin Defendant's misconduct to prevent ongoing and future harm that will result.

68. **Punitive Damages.** Plaintiff seeks punitive damages pursuant to this cause of action for violation of the UCL on behalf of Plaintiff and the California Subclass. Defendant's unfair, fraudulent, and unlawful conduct described herein constitutes malicious, oppressive, and/or fraudulent conduct warranting an award of punitive damages as permitted by law. Defendant's misconduct is malicious as Defendant acted with the intent to cause Plaintiff and consumers to pay for Products that they were not, in fact, receiving. Defendant willfully and knowingly disregarded the rights of Plaintiff and consumers as Defendant was, at all times, aware of the probable dangerous consequences of its conduct and deliberately failed to avoid misleading consumers, including Plaintiff. Defendant's misconduct is oppressive as, at all relevant times, said conduct was so vile, base, and/or contemptible that reasonable people would look down upon it and/or otherwise would despise such corporate misconduct. Said misconduct subjected Plaintiff and consumers to cruel and unjust hardship in knowing disregard of their rights. Defendant's misconduct is fraudulent as Defendant intentionally misrepresented and/or concealed material facts with the intent to deceive

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Plaintiff and consumers. The wrongful conduct constituting malice, oppression, and/or fraud was committed, authorized, adopted, approved, and/or ratified by officers, directors, and/or managing agents of Defendant.

A. <u>"Unfair" Prong</u>

69. **Unfair Standard.** Under the UCL, a challenged activity is "unfair" when "any injury it causes outweighs any benefits provided to consumers and the injury is one that the consumers themselves could not reasonably avoid." *Camacho v. Auto Club of Southern California*, 142 Cal. App. 4th 1394, 1403 (2006).

70. **Injury.** Defendant's action of mislabeling the Products with the Challenged Representation does not confer any benefit to consumers; rather, doing so causes injuries to consumers, who do not receive products commensurate with their reasonable expectations, overpay for the Products, and receive Products of lesser standards than what they reasonably expected to receive. Consumers cannot avoid any of the injuries caused by Defendant's deceptive labeling and advertising of the Products. Accordingly, the injuries caused by Defendant's deceptive labeling and advertising outweigh any benefits.

71. **Balancing Test.** Some courts conduct a balancing test to decide if a challenged activity amounts to unfair conduct under California Business and Professions Code Section 17200. They "weigh the utility of the defendant's conduct against the gravity of the harm to the alleged victim." *Davis v. HSBC Bank Nevada, N.A.*, 691 F.3d 1152, 1169 (9th Cir. 2012).

72. **No Utility.** Here, Defendant's conduct of labeling the Products with the Reef Friendly Representation when the Products contain harmful chemical ingredients that harm and/or kill coral reefs has no utility and financially harms purchasers. Thus, the utility of Defendant's conduct is vastly outweighed by the gravity of harm.

73. **Legislative Declared Policy.** Some courts require that "unfairness must be tethered to some legislative declared policy or proof of some actual or threatened impact on competition." *Lozano v. AT&T Wireless Servs. Inc.*, 504 F. 3d 718, 735 (9th Cir. 2007).

74. **Unfair Conduct.** Defendant's labeling and advertising of the Products, as alleged herein, is false, deceptive, misleading, and unreasonable, and constitutes unfair conduct. Defendant

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knew or should have known of its unfair conduct. Defendant's misrepresentations constitute an unfair business practice within the meaning of California Business and Professions Code Section 17200.

75. **Reasonably Available Alternatives.** There existed reasonably available alternatives to further Defendant's legitimate business interests, other than the conduct described herein. Defendant could have refrained from labeling the Products with the Reef Friendly Representation.

76. **Defendant's Wrongful Conduct.** All of the conduct alleged herein occurs and continues to occur in Defendant's business. Defendant's wrongful conduct is part of a pattern or generalized course of conduct repeated on thousands of occasions daily.

77. **Injunction.** Pursuant to Business and Professions Code Sections 17203, Plaintiff and the California Subclass seek an order of this Court enjoining Defendant from continuing to engage, use, or employ its practices of labeling the Products with the Reef Friendly Representation.

78. **Causation/Damages.** Plaintiff and the California Subclass have suffered injury in fact and have lost money as a result of Defendant's unfair conduct. Plaintiff and the California Subclass paid an unwarranted premium for these Products. Specifically, Plaintiff and the California Subclass paid for Products that contain chemical active ingredients. Plaintiff and the California Subclass would not have purchased the Products, or would have paid substantially less for the Products, if they had known that the Products' advertising and labeling were deceptive. Accordingly, Plaintiff seeks damages, restitution and/or disgorgement of ill-gotten gains pursuant to the UCL.

B. <u>"Fraudulent" Prong</u>

79. **Fraud Standard.** The UCL considers conduct fraudulent (and prohibits said conduct) if it is likely to deceive members of the public. *Bank of the West v. Superior Court*, 2 Cal. 4th 1254, 1267 (1992).

80. **Fraudulent & Material Challenged Representations.** Defendant used the Reef Friendly Representation with the intent to sell the Products to consumers, including Plaintiff and the California Subclass. The Challenged Representation is false and Defendant knew or should have known of its falsity. The Challenged Representation is likely to deceive consumers into purchasing the Products because they are material to the average, ordinary, and reasonable consumer.

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81. **Fraudulent Business Practice.** As alleged herein, the misrepresentations by Defendant constitute a fraudulent business practice in violation of California Business & Professions Code Section 17200.

82. **Reasonable and Detrimental Reliance.** Plaintiff and the California Subclass reasonably and detrimentally relied on the material and false Challenged Representation to their detriment in that they purchased the Products.

83. **Reasonably Available Alternatives.** Defendant had reasonably available alternatives to further its legitimate business interests, other than the conduct described herein. Defendant could have refrained from labeling the Products with the Reef Friendly Representation.

84. **Business Practice.** All of the conduct alleged herein occurs and continues to occur in Defendant's business. Defendant's wrongful conduct is part of a pattern or generalized course of conduct.

85. **Injunction.** Pursuant to Business and Professions Code Sections 17203, Plaintiff and the California Subclass seek an order of this Court enjoining Defendant from continuing to engage, use, or employ its practice of labeling the Products with the Reef Friendly Representation.

86. **Causation/Damages.** Plaintiff and the California Subclass have suffered injury in fact and have lost money as a result of Defendant's fraudulent conduct. Plaintiff paid an unwarranted premium for the Products. Specifically, Plaintiff and the California Subclass paid for products that they believed contained only ingredients that are safe for coral reefs, when, in fact, the Products contained harmful chemical ingredients that can harm and/or kill coral reefs. Plaintiff and the California Subclass would not have purchased the Products if they had known the truth. Accordingly, Plaintiff seeks damages, restitution, and/or disgorgement of ill-gotten gains pursuant to the UCL.

C. "Unlawful" Prong

87. **Unlawful Standard.** The UCL identifies violations of other laws as "unlawful practices that the unfair competition law makes independently actionable." *Velazquez v. GMAC Mortg. Corp.*, 605 F. Supp. 2d 1049, 1068 (C.D. Cal. 2008).

88. **Violations of CLRA and FAL.** Defendant's labeling of the Products, as alleged

herein, violates California Civil Code sections 1750, *et seq.* (the "**CLRA**") and California Business and Professions Code sections 17500, *et seq.* (the "**FAL**") as set forth below in the sections regarding those causes of action.

89. **Violations of Bus. & Prof. Code 17580, et seq. (Environmental Advertising).** Section 17580.5 makes it "unlawful for a person to make an untruthful, deceptive, or misleading environmental marketing claim, whether explicit or implied," and defines environmental marketing claims consistent with the Green Guides. The Green Guides caution marketers that "[i]t is deceptive to misrepresent, directly or by implication, that a product, package, or service offers a general environmental benefit," and warns marketers that such claims, for example, lead consumers to believe that the seller's wares have no negative environmental impact. 16 C.F.R. § 260.4. Similarly, section 17580 also identifies several examples of environmental labeling claims that are interpreted to mean that the product will not harm the environment, including: "environmental choice," "ecologically friendly," "earth friendly," "environmentally friendly," "ecologically sound," "environmentally sound," "environmentally safe," "ecologically safe," "environmentally lite," "green product," and similar terms. Indeed, section 17581 not only criminalizes such deceptive marketing claims, but authorizes the Court to award monetary penalties.

90. **Additional Violations.** Defendant's conduct in making the false representations described herein constitutes a knowing failure to adopt policies in accordance with and/or adherence to applicable laws, as set forth herein, all of which are binding upon and burdensome to their competitors. This conduct engenders an unfair competitive advantage for Defendant, thereby constituting an unfair, fraudulent and/or unlawful business practice under California Business & Professions Code sections 17200-17208. Additionally, Defendant's misrepresentations of material facts, as set forth herein, violate California Civil Code sections 1572, 1573, 1709, 1710, 1711, and 1770, as well as the common law.

91. **Unlawful Conduct.** Defendant's packaging, labeling, and advertising of the Products, as alleged herein, are false, deceptive, misleading, and unreasonable, and constitute unlawful conduct. Defendant knew or should have known of its unlawful conduct.

92. **Reasonably Available Alternatives.** Defendant had reasonably available alternatives

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to further its legitimate business interests, other than the conduct described herein. Defendant could have refrained from labeling the Products with the Reef Friendly Representation.

93. **Business Practice.** All of the conduct alleged herein occurs and continues to occur in Defendant's business. Defendant's wrongful conduct is part of a pattern or generalized course of conduct.

94. **Injunction.** Pursuant to Business and Professions Code Section 17203, Plaintiff and the California Subclass seek an order of this Court enjoining Defendant from continuing to engage, use, or employ its practice of false and deceptive advertising of the Products.

95. **Causation/Damages.** Plaintiff and the California Subclass have suffered injury in fact and have lost money as a result of Defendant's unlawful conduct. Plaintiff and the California Subclass paid an unwarranted premium for the Products. Plaintiff and the California Subclass would not have purchased the Products if they had known that Defendant's purposely deceived consumers into believing that the Products are truly safe for coral reefs. Accordingly, Plaintiff seeks damages, restitution and/or disgorgement of ill-gotten gains pursuant to the UCL.

VIII.

SECOND CAUSE OF ACTION

Violation of California False Advertising Law

(Cal. Bus. & Prof. Code §§ 17500, *et seq*.)

(*On Behalf of the California Subclass*)

96. **Incorporation by reference.** Plaintiff re-alleges and incorporates by reference all allegations contained in this complaint, as though fully set forth herein.

97. **California Subclass.** Plaintiff brings this claim individually and on behalf of the California Subclass who purchased the Products within the applicable statute of limitations.

98. **FAL Standard.** The False Advertising Law, codified at Cal. Bus. & Prof. Code section 17500, *et seq*., prohibits "unfair, deceptive, untrue or misleading advertising[.]"

99. **False & Material Challenged Representations Disseminated to Public.** Defendant violated section 17500 when it advertised and marketed the Products through the unfair, deceptive, untrue, and misleading Reef Friendly Representation disseminated to the public through the

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Products' labeling, packaging and advertising. These representations were false because the Products do not conform to them. The representations were material because they are likely to mislead a reasonable consumer into purchasing the Products.

100. **Knowledge.** In making and disseminating the representations alleged herein, Defendant knew or should have known that the representations were untrue or misleading, and acted in violation of § 17500.

101. **Intent to sell.** Defendant's Challenged Representation was specifically designed to induce reasonable consumers, like Plaintiff and the California Subclass, to purchase the Products.

102. **Causation/Damages.** As a direct and proximate result of Defendant's misconduct in violation of the FAL, Plaintiff and members of the California Subclass were harmed in the amount of the purchase price they paid for the Products. Further, Plaintiff and members of the Class have suffered and continue to suffer economic losses and other damages including, but not limited to, the amounts paid for the Products, and any interest that would have accrued on those monies, in an amount to be proven at trial. Accordingly, Plaintiff seeks a monetary award for violation of the FAL in damages, restitution, and/or disgorgement of ill-gotten gains to compensate Plaintiff and the California Subclass for said monies, as well as injunctive relief to enjoin Defendant's misconduct to prevent ongoing and future harm that will result.

103. **Punitive Damages.** Defendant's unfair, fraudulent, and unlawful conduct described herein constitutes malicious, oppressive, and/or fraudulent conduct warranting an award of punitive damages as permitted by law. Defendant's misconduct is malicious as Defendant acted with the intent to cause Plaintiff and consumers to pay for Products that they were not, in fact, receiving. Defendant willfully and knowingly disregarded the rights of Plaintiff and consumers as Defendant was aware of the probable dangerous consequences of its conduct and deliberately failed to avoid misleading consumers, including Plaintiff. Defendant's misconduct is oppressive as, at all relevant times, said conduct was so vile, base, and/or contemptible that reasonable people would look down upon it and/or otherwise would despise such corporate misconduct. Said misconduct subjected Plaintiff and consumers to cruel and unjust hardship in knowing disregard of their rights. Defendant's misconduct is fraudulent as Defendant, at all relevant times, intentionally

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misrepresented and/or concealed material facts with the intent to deceive Plaintiff and consumers. The wrongful conduct constituting malice, oppression, and/or fraud was committed, authorized, adopted, approved, and/or ratified by officers, directors, and/or managing agents of Defendant.

IX.

<u>THIRD CAUSE OF ACTION</u>

Violation of California Consumers Legal Remedies Act

(Cal. Civ. Code §§ 1750, *et seq*.)

(*On Behalf of the California Subclass*)

104. **Incorporation by Reference.** Plaintiff re-alleges and incorporates by reference all allegations contained in this complaint, as though fully set forth herein.

105. **California Subclass.** Plaintiff brings this claim individually and on behalf of the California Subclass who purchased the Products within the applicable statute of limitations.

106. **CLRA Standard.** The CLRA provides that "unfair methods of competition and unfair or deceptive acts or practices undertaken by any person in a transaction intended to result or which results in the sale or lease of goods or services to any consumer are unlawful."

107. **Goods/Services.** The Products are "goods," as defined by the CLRA in California Civil Code §1761(a).

108. **Defendant.** Defendant is a "person," as defined by the CLRA in California Civil Code §1761(c).

109. **Consumers.** Plaintiff and members of the California Subclass are "consumers," as defined by the CLRA in California Civil Code §1761(d).

110. **Transactions.** The purchase of the Products by Plaintiff and members of the California Subclass are "transactions" as defined by the CLRA under California Civil Code section 1761(e).

111. **Violations of the CLRA.** Defendant violated the following sections of the CLRA by selling the Products to Plaintiff and the California Subclass through the false, misleading, deceptive, and fraudulent Challenged Representation:

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a. Section 1770(a)(5) by representing that the Products have "characteristics, . . . uses [or] benefits . . . which [they] do not have."

b. Section 1770(a)(7) by representing that the Products "are of a particular standard, quality, or grade . . . [when] they are of another."

c. Section 1770(a)(9) by advertising the Products "with [the] intent not to sell them as advertised."

112. **Knowledge.** Defendant's uniform and material representations and omissions regarding the Products were likely to deceive, and Defendant knew or should have known that its representations and omissions were untrue and misleading.

113. **Malicious.** Defendant's conduct is malicious, fraudulent, and wanton in that Defendant intentionally misled and withheld material information from consumers, including Plaintiff, to increase the sale of the Products.

114. **Plaintiff Could Not Have Avoided Injury.** Plaintiff and members of the California Subclass could not have reasonably avoided such injury. Plaintiff and members of the California Subclass were unaware of the existence of the facts that Defendant suppressed and failed to disclose, and Plaintiff and members of the California Subclass would not have purchased the Products and/or would have purchased them on different terms had they known the truth.

115. **Causation/Reliance/Materiality.** Plaintiff and the California Subclass suffered harm as a result of Defendant's violations of the CLRA because they relied on the Challenged Representation in deciding to purchase the Products. The Challenged Representation was a substantial factor. The Challenged Representation was material because a reasonable consumer would consider it important in deciding whether to purchase the Products.

116. **Section 1782 – Prelitigation Demand/Notice.** Pursuant to California Civil Code section 1782, more than thirty days prior to the filing of this complaint, on July 28, 2021, Plaintiff's counsel, acting on behalf of Plaintiff and members of the Class, mailed a notice via U.S. certified mail, return receipt requested, to Defendant at its principal places of business and care of its agent for service of process registered with the California Secretary of State (Edgewell Personal Care Brands, LLC, 6 Research Drive, Shelton, CT 06484; Edgewell Personal Care Brands, LLC, 1350

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Timberlake Manor Pkwy., Ste. 300, Chesterfield, MO 63017; Corporate Creations Network Inc., 801 US highway 1, North Palm Beach, FL 33408) regarding Defendant's particular violations of the California Consumers Legal Remedies Act, as set forth above, and demanding that Defendant correct and otherwise rectify those violations with respect to Plaintiff and all members of the Class. The form, content, and delivery of the notice satisfy subsections (1) and (2) of section 1782(a). The notice of violations and demand for remedial action, as of the filing of this complaint, did not result in adequate correction, repair, replacement, and/or other remedy by Defendants, including all remedial action set forth in the notice letter and as set forth under section 1782(c).

117. **Causation/Damages.** As a direct and proximate result of Defendant's misconduct in violation of the CLRA, Plaintiff and members of the California Subclass were harmed in the amount of the purchase price they paid for the Products. Further, Plaintiff and members of the Class have suffered and continue to suffer economic losses and other damages including, but not limited to, the amounts paid for the Products, and any interest that would have accrued on those monies, in an amount to be proven at trial. Accordingly, Plaintiff seeks a monetary award for violation of this Act in the form of damages, restitution, disgorgement of ill-gotten gains to compensate Plaintiff and the California Subclass for said monies.

118. **Injunction.** Given that Defendant's conduct violated California Civil Code section 1780, Plaintiff and members of the California Subclass are entitled to seek, and do hereby seek, injunctive relief to put an end to Defendant's violations of the CLRA. Plaintiff has no adequate remedy at law. Without equitable relief, Defendant's unfair and deceptive practices will continue to harm Plaintiff and the California Subclass.

119. **Punitive Damages.** Defendant's unfair, fraudulent, and unlawful conduct described herein constitutes malicious, oppressive, and/or fraudulent conduct warranting an award of punitive damages as permitted by law. Defendant's misconduct is malicious as Defendant acted with the intent to cause Plaintiff and consumers to pay for Products that they were not, in fact, receiving. Defendant willfully and knowingly disregarded the rights of Plaintiff and consumers as Defendant was, at all times, aware of the probable dangerous consequences of its conduct and deliberately failed to avoid misleading consumers, including Plaintiff. Defendant's misconduct is oppressive as,

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at all relevant times, said conduct was so vile, base, and/or contemptible that reasonable people would look down upon it and/or otherwise would despise such corporate misconduct. Said misconduct subjected Plaintiff and consumers to cruel and unjust hardship in knowing disregard of their rights. Defendant's misconduct is fraudulent as Defendant, at all relevant times, intentionally misrepresented and/or concealed material facts with the intent to deceive Plaintiff and consumers. The wrongful conduct constituting malice, oppression, and/or fraud was committed, authorized, adopted, approved, and/or ratified by officers, directors, and/or managing agents of Defendant.

X.

FOURTH CAUSE OF ACTION

Breach of Warranty

(*On Behalf of the Nationwide Class and California Subclass*)

120. **Incorporation by Reference.** Plaintiff re-alleges and incorporates by reference all allegations contained in this complaint, as though fully set forth herein.

121. **Nationwide Class & California Subclass.** Plaintiff brings this claim individually and on behalf of the Nationwide Class and California Subclass (the Class) who purchased the Products within the applicable statute of limitations.

122. **Express Warranty.** By advertising and selling the Products at issue, Defendant made promises and affirmations of fact on the Products' packaging and labeling, and through its marketing and advertising, as described herein. This labeling and advertising constitute express warranties and became part of the basis of the bargain between Plaintiff and members of the Class and Defendant. Defendant purports, through the Products' labeling and advertising, to create express warranties that the Products, among other things, conform to the Challenged Representations.

123. **Breach of Warranty.** Contrary to Defendant's warranties, the Products do not conform to the Challenged Representations and, therefore, Defendant breached its warranties about the Products and their qualities.

124. **Causation/Remedies.** As a direct and proximate result of Defendant's breach of warranty, Plaintiff and members of the Class were harmed in the amount of the purchase price they paid for the Products. Further, Plaintiff and members of the Class have suffered and continue to

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suffer economic losses and other damages including, but not limited to, the amounts paid for the Products, and any interest that would have accrued on those monies, in an amount to be proven at trial. Accordingly, Plaintiff seeks a monetary award for breach of warranty in the form of damages, restitution, and/or disgorgement of ill-gotten gains to compensate Plaintiff and the Class for said monies, as well as injunctive relief to enjoin Defendant's misconduct to prevent ongoing and future harm that will result.

125. **Punitive Damages.** Plaintiff seeks punitive damages pursuant to this cause of action for breach of warranty on behalf of Plaintiff and the Class. Defendant's unfair, fraudulent, and unlawful conduct described herein constitutes malicious, oppressive, and/or fraudulent conduct warranting an award of punitive damages as permitted by law. Defendant's misconduct is malicious as Defendant acted with the intent to cause Plaintiff and consumers to pay for Products that they were not, in fact, receiving. Defendant willfully and knowingly disregarded the rights of Plaintiff and consumers as Defendant was aware of the probable dangerous consequences of its conduct and deliberately failed to avoid misleading consumers, including Plaintiff. Defendant's misconduct is oppressive as, at all relevant times, said conduct was so vile, base, and/or contemptible that reasonable people would look down upon it and/or otherwise would despise such misconduct. Said misconduct subjected Plaintiff and consumers to cruel and unjust hardship in knowing disregard of their rights. Defendant's misconduct is fraudulent as Defendant, at all relevant times, intentionally misrepresented and/or concealed material facts with the intent to deceive Plaintiff and consumers. The wrongful conduct constituting malice, oppression, and/or fraud was committed, authorized, adopted, approved, and/or ratified by officers, directors, and/or managing agents of Defendant.

XI.

FIFTH CAUSE OF ACTION

Unjust Enrichment/Restitution

(*On Behalf of the Nationwide Class and California Subclass*)

126. **Incorporation by Reference.** Plaintiff re-alleges and incorporates by reference all allegations contained in this complaint, as though fully set forth herein.

127. **Nationwide Class & California Subclass.** Plaintiff brings this claim individually and

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on behalf of the Nationwide Class and California Subclass (the Class) who purchased the Products within the applicable statute of limitations.

128. **Plaintiff/Class Conferred a Benefit.** By purchasing the Products, Plaintiff and members of the Class conferred a benefit on Defendant in the form of the purchase price of the Products.

129. **Defendant's Knowledge of Conferred Benefit.** Defendant had knowledge of such benefit and Defendant appreciated the benefit because, were consumers not to purchase the Products, Defendant would not generate revenue from the sales of the Products.

130. **Defendant's Unjust Receipt Through Deception.** Defendant's knowing acceptance and retention of the benefit is inequitable and unjust because the benefit was obtained by Defendant's fraudulent, misleading, and deceptive representations and omissions.

131. **Causation/Damages.** As a direct and proximate result of Defendant's unjust enrichment, Plaintiff and members of the Class were harmed in the amount of the purchase price they paid for the Products. Further, Plaintiff and members of the Class have suffered and continue to suffer economic losses and other damages including, but not limited to, the amounts paid for the Products, and any interest that would have accrued on those monies, in an amount to be proven at trial. Accordingly, Plaintiff seeks a monetary award for unjust enrichment in damages, restitution, and/or disgorgement of ill-gotten gains to compensate Plaintiff and the Class for said monies, as well as injunctive relief to enjoin Defendant's misconduct to prevent ongoing and future harm that will result.

132. **Punitive Damages.** Plaintiff seeks punitive damages pursuant to this cause of action for unjust enrichment on behalf of Plaintiff and the Class. Defendant's unfair, fraudulent, and unlawful conduct described herein constitutes malicious, oppressive, and/or fraudulent conduct warranting an award of punitive damages as permitted by law. Defendant's misconduct is malicious as Defendant acted with the intent to cause Plaintiff and consumers to pay for Products that they were not, in fact, receiving. Defendant willfully and knowingly disregarded the rights of Plaintiff and consumers as Defendant was aware of the probable dangerous consequences of its conduct and deliberately failed to avoid misleading consumers, including Plaintiff. Defendant's misconduct is

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oppressive as, at all relevant times, said conduct was so vile, base, and/or contemptible that reasonable people would look down upon it and/or otherwise would despise such corporate misconduct. Said misconduct subjected Plaintiff and consumers to cruel and unjust hardship in knowing disregard of their rights. Defendant's misconduct is fraudulent as Defendant, at all relevant times, intentionally misrepresented and/or concealed material facts with the intent to deceive Plaintiff and consumers. The wrongful conduct constituting malice, oppression, and/or fraud was committed, authorized, adopted, approved, and/or ratified by officers, directors, and/or managing agents of Defendant.

XII.

PRAYER FOR RELIEF

133. WHEREFORE, Plaintiff, individually and on behalf of all others similarly situated, prays for judgment against Defendant as follows:

a. **Certification:** For an order certifying this action as a class action, appointing Plaintiff as the Class Representative, and appointing Plaintiff's Counsel as Class Counsel;

b. **Declaratory Relief:** For an order declaring that Defendant's conduct violates the statutes and laws referenced herein;

c. **Injunction:** For an order requiring Defendant to immediately cease and desist from selling the unlawful Products in violation of law; enjoining Defendant from continuing to market, advertise, distribute, and sell the Products in the unlawful manner described herein; requiring Defendant to engage in an affirmative advertising campaign to dispel the public misperception of the Products resulting from Defendant's unlawful conduct; and requiring all further and just corrective action;

d. **Damages/Restitution/Disgorgement:** For an order awarding monetary compensation in the form of damages, restitution, and/or disgorgement to Plaintiff and the Class;

e. **Punitive Damages/Statutory Penalties:** For an order awarding punitive damages and all recoverable statutory penalties;

f. **Attorneys' Fees & Costs:** For an order awarding attorneys' fees and costs;

g. **Pre/Post-Judgment Interest:** For an order awarding pre-judgment and post-judgment interest; and

h. **All Just & Proper Relief:** For such other and further relief as the Court deems just and proper.

Dated: August 3, 2022

Respectfully submitted,

CLARKSON LAW FIRM, P.C.
By:

/s/ *Katherine Bruce*
Ryan J. Clarkson, Esq.
Shireen M. Clarkson, Esq.
Katherine A. Bruce, Esq.
Kelsey J. Elling, Esq.

BURSOR & FISHER, P.A.
Neal J. Deckart, Esq.
Brittany S. Scott, Esq.

FARUQI & FARUQI, LLP
Benjamin Heikali, Esq.

Attorneys for Plaintiff

DEMAND FOR JURY TRIAL

Plaintiff hereby demands a trial by jury on all issues and causes of action so triable.

Dated: August 3, 2022

Respectfully submitted,

CLARKSON LAW FIRM, P.C.
By:

/s/ *Katherine Bruce*
Ryan J. Clarkson, Esq.
Shireen M. Clarkson, Esq.
Katherine A. Bruce, Esq.
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